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Section 3001, Identification and Listing of
Hazardous Waste; Section 261.33, Hazardous
Waste from Discarding of Commercial Chemical
Products and the Containers and Spill Residues
Thereof: Background Document

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SECTION 3001 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

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INTRODUCTION

This background document explains the basis for regulations concerning discarded commercial products, which are described and listed in §261.33 and for which exclusion levels are established in §261.5. Commercial chemical products or manufacturing chemical intermediates are divided into two categories: those which are acutely hazardous and subject to stringent exclusion levels; and those which are hazardous and which are regulated in the same manner as other hazardous wastes. These regulations concern commercial chemical products, and associated off-specification chemical products, spill cleanup residues and debris. For acutely hazardous chemicals, the regulations also cover containers and inner liners which contained the acutely hazardous chemicals.

PROPOSED RULES

Synopsis of Proposed Rules

Appendices III, IV, and V of the Proposed Rules and Appendix XII of the Supplemental Proposed Rule listed approximately 300 toxic chemicals.⁻ Appendix III listed 24 pesticides which either had been cancelled for some or all uses under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) or were undergoing RPAR (rebuttable presumption against registration) under FIFRA. Appendix IV listed 157 chemicals that were listed as Poison A, Poison B or ORM-A materials in the Department of Transportation regulations under 49 CFR Parts 172 and 173. Appendix V listed the remainder of the 129 toxic priority pollutants (not already included on Appendices III or IV) for which effluent guidelines limitations were being developed under the Clean Water Act. Appendix XII listed 33 chemicals that had been found to be human carcinogens or potential human carcinogens by the International Agency for Research on Cancer.

By reference to the appendices these hazardous chemicals, if discarded, were listed as hazardous wastes in §250.14(a) of the Proposed Rules. In addition, §250.14(a) also provided that off-specification species of these toxic chemicals, if discarded; the emptied containers from these chemicals, if not triple rinsed; and the clean-up residues and debris from spills of these chemicals were hazardous wastes.

In selecting these chemicals EPA relied heavily on the work done by other offices in the Agency and by other agencies. The Agency believed that each listed chemical possessed toxic properties: that they either exhibited the proposed Extraction Procedure (EP) toxicity characteristic or that they were either toxic, explosive, ignitable, reactive, mutagenic, carcinogenic or teratogenic substances. The Agency had not, however, conducted a laboratory evaluation of each substance with reference to either the characteristics or the criteria for listing (§261.11).

These chemicals were proposed to be hazardous wastes if (1) they, themselves, were discarded, (2) off-specification species of these chemicals were discarded, (3) containers which formerly contained these chemicals were discarded or (4) clean-up residues and debris from spills of these chemicals were discarded. Importantly, these chemicals were not listed to be used to cause solid wastes derived from manufacturing processes (and which might only contain very low concentrations of these chemicals) to be listed as hazardous wastes. As is noted later in this document, this point was misunderstood by many commenters.

Section 250.29(a) of the Proposed Rules provided that any retailer or any person who produced and disposed of no more than 100 kilograms of hazardous waste in any one month would not be subject to the full Subtitle C regulation if the waste was disposed of in a Subtitle D facility. The effects of this exemption were that (1) any retailer could discard any and all quantities of these chemicals or the associated materials described above without being subject to regulation and (2) any small quantity generator could discard as much as 100 kilograms per month* of these chemicals or the associated materials without being subject to the Subtitle C regulations. Consequently, these chemicals and associated materials effectively were hazardous wastes only if generated by non-retail and large-quantity (greater than 100 kilograms per month) generators.

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* Provided he discarded no other hazardous wastes. The exemption, as proposed, covered total quantity of hazardous wastes. Hence, only 100 kilogram of the 295 chemicals and other hazardous wastes, in aggregate, in any one month, were excluded. The final exlcusions also relate to total quantities of hazardous waste.

Rationale for Proposed Rules

In the development of the Proposed Rules, a number of persons pointed out that an important part of the hazardous waste generated throughout the country were commercial chemicals that normally are not discarded but, for a variety of reasons, are discarded occasionally.

Examples given were reduction of inventory, changes in product line, cancellation of pesticides, no further use for remaining stocks and residuals from batch-process manufacturing or formulating operations. In particular, operators of solid waste management facilities indicated that some "wastes" which they receive are discarded pure chemicals as opposed to typical wastes from manufacturing or other activities. These same persons also indicated that off-specification chemicals are sometimes discarded. The Agency recognized that some of these chemicals, commercial products and off-specification materials were toxic and, even though discarded only occasionally (and usually in small amounts,) could pose a substantial hazard to human health or the environment.

The Agency therefore concluded that pesticides that had been cancelled or were being reviewed for possible cancellation action (Appendix III of the Proposed Rules) and Poison A, Poison B and ORM-A materials that are regulated by the Department of Transportation because of their threat to safety (Appendix IV) constituted chemicals that were toxic and, if discarded, could pose substantial hazard to human health or the environment. It further concluded that the toxic pollutants being regulated under §307(a) of the Clean Water Act (Appendix V, unless already listed in Appendix III or IV,) and known or suspected human carcinogens (Appendix XII) were hazardous materials that posed significant risk to human health or the environment, if discarded. Consequently, these chemicals were listed in the Proposed Rules and were established to be hazardous wastes if they or their off-specification species were discarded.

The Agency also learned that a significant part of the solid waste generated consisted of nominally "empty" containers, including containers that had contained toxic chemicals. These "empty" containers typically contain chemical residues because they had not been rinsed or otherwise decontaminated. It also was said that, oftentimes, containers were not completely empty and contained significant amounts of chemicals. Finally, the Agency had reports of several damage cases where the chemical residues left in discarded containers had caused human health injury. One such incident involved a child who was hospitalized for organophosphate poisoning after playing among empty pesticide drums purchased by the city for use as trash containers (U.S. House of Representatives, House Report 94-1491 at 22). On the basis of this advice, the Agency reasoned that unrinsed, contaminated, discarded containers, that had held any of the chemicals discussed above, could cause injury and pose other substantial hazards to human health or the environment. Consequently, it included such containers in the proposed list of hazardous wastes.

Finally, the Agency recognized that there were occasional spills during the transportation or storage of chemicals which resulted in the contamination of soils, waters and other materials, including debris. Toxic chemicals were no more immune to occasional spills during their manufacture, storage, transportation or use than oils; spills with which the Agency had considerable experience. Thus, the Agency concluded that the contaminated spill clean-up residues and debris from toxic chemical spills, if not properly disposed of as hazardous wastes, pose substantial hazard to human health or the environment. Consequently, it included such residues and debris in the proposed list of hazardous wastes. In other words, while the Clean Water Act provides for reporting and clean-up of spilled materials of spills into the navigable waters, this RCRA provision requires management of spills of these listed materials as hazardous waste. Additionally, it provides coverage for in-plant or other spills not within the scope of the Clean Water Act regulations.

Response to Comments

General

A number of commenters misunderstood the Proposed Rules and assumed that any waste, including manufacturing process wastes, containing any of the chemicals listed in Appendices III, IV, V and XII would be a hazardous waste. This led several of these commenters to urge that a quantity or concentration level, below which a waste would not be a hazardous waste, be established for each chemical listed in the Appendices. Other commenters urged that, if the Appendices only applied to pure chemicals and then only applied when they are discarded, these points should be emphasized. The Agency recognizes that the language of the Proposed Rules may have been confusing. Consequently, it has substantially re-written the provisions, currently in §261.33 of the Final Rules, and has added an extensive comment to clarify the points raised by these commenters. This amplification is further discussed in the following section, Reconsideration of the Proposed Rules, of this document.

One commenter urged that degree of hazard be incorporated in the wastes listed in §250.14(a) and the related Appendices. The Agency's response to comments on the broad topic of the use of degree of hazard in the listing of hazardous wastes is discussed in a separate Background Document.

Basis for Listing

A few commenters seemed to suggest that Appendices III, IV, V and XII should be used to cause wastes containing any of the listed chemicals to be hazardous wastes. This would essentially change the list into a "characteristic" with its attendent responsibilities for the generator. The Agency did not intend such a result. However, the Agency has revised its criteria for listing hazardous wastes (see §261.11 of the Final Rules) to include this concept. The Agency has developed a list of hazardous constitutents, Appendix VIII, and will presume that a waste containing any of those constituents is a hazardous waste unless consideration of other factors, such as quantity of the waste, concentration of the toxic agent or mobility of the toxicant, etc., causes the Agency to conclude that the waste does not pose a substantial hazard to human health or the environment. This criterion requires the Agency to make a determination to list such wastes; it is not the responsibility of the regulated community to designate unlisted wastes as hazardous wastes because they contain materials on Appendix VIII. Appendix VIII does in fact contain the toxic substances listed in §261.33(e) of the final rule. A more detailed discussion of this criterion is provided in the Background Document covering §261.11 of the Final Rules.

Several commenters pointed out that the basis for listing each chemical listed in Appendices III, IV and V was not given;

rather the generic basis for listing was given in the waste classes listed in §250.14(a) where the designation of T, O and M indicated that all the chemicals listed in the Appendices are hazardous because they possess the toxicity characteristic and contain toxic organic and carcinogenic, mutagenic and teratogenic constituents. These commenters noted that certain of the listed chemicals did not meet all three of these listing criteria.

The Agency agrees and admits that it should have placed the specific basis for listing with each chemical in the Appendices rather than in §250.14(a). In the final rule, EPA has classified the basis for listing the chemical products subject to regulation. The substances contained in the original listings have been reviewed to determine whether they satisfy the listing criteria. A table (Appendix A) accompanying this background document indicates the disposition of each substance originally listed. For those that remain on §261.33(e) the basis for such inclusion is noted. A second table (Appendix B) indicates the basis for listing of the substances on §261.33(f). Also noted on these tables are references to the documentary material supporting the inclusions. These documents include health effects documents prepared in support of these regulations materials supporting RPAR actions, background documents supporting National Interim Primary Drinking Water Standards, materials of EPA's Cancer Assessment Group, data obtained from the NIOSH Registry of Toxic Effects, Sax's, Dangerous Properties of Industrial Materials and the Research and Development Compendium, Part I, Materials Classification document published by the Department of Transportation. In the case of chlorofluorocarbons, documents supporting regulations under the Toxic Substances Control Act also are included.

Single List

Two commenters found the three lists of chemicals (Appendices III, IV and V) confusing and urged that they be combined. The Agency concurs and has employed only one list for each category in the Final Rules, namely §§261.33(e) and (f).

Listing of Off-Specification Materials

One commenter urged that a clear distinction be made between off-specification materials which are reprocessed rather than discarded and that only the latter be regulated. The Final rule has been clarified to apply only to discarded material.

Listing of ORM-A Substances

Several commenters objected to the listing, in Appendix IV, of chemicals that are classified by the Department of Transportation (DOT) as ORM-A materials. These commenters claimed that ORM-A materials are regulated by DOT because they possess properties that interefere with transportation safety not because they are hazardous when disposed. An ORM-A material is one that has an anesthetic, irritating, noxious, toxic or other similar property which can cause extreme annoyance or discomfort to passengers and crew in the event of leakage during transportation [49 CFR 173.500(a)(1)]. The Agency concurs with this comment and has not listed chemicals in the Final Rules simply because they are ORM-A materials. Rather than adopt the proposed list _in toto_, EPA has evaluated each substance in accordance with the criteria for listing. This review has resulted in a number of chemicals being listed as acutely hazardous in §261.33(e) and hazardous in §261.33(f) or dropped from the EPA lists of hazardous wastes because no data was available to the Agency to support such a listing.

Another commenter objected to Appendix IV, as a whole, because it listed chemicals that are hazardous in transportation and not necessarily hazardous at other times. The Agency has listed a number of chemicals in the Final Rules that DOT lists as Poison A and Poison B materials. The basis for this listing, however, is not that they only pose hazards during transportation but rather that they are acutely toxic, satisfying the acutely hazardous criterion, and so present a threat to human health and the environment when discarded.

Listing of Containers

Several commenters were troubled by the inflexibility of the triple-rinse provision in the proposed listing of containers in §250.14(a). This provision excluded, as hazardous waste, containers of the listed chemicals that had been triple-rinsed. This procedure is an EPA recommended practice for pesticide containers (40 CFR 165.9) and also a part of several State programs (e.g., Washington, Oregon).

Basically, these commenters suggested that there are other ways to effectively decontaminate containers. One suggested rinsing with one-tenth volume of the container, but did not specify the type of solution. Another recommended incineration but gave no specifications. Still another pointed out that the EPA registered label for the pesticide, Malathion ULV Concentrate, specifies a rinsing solution and procedure that does not comport with triple rinsing as defined in the Proposed Rules. The Agency recognizes that there are a large number of ways for rinsing or otherwise decontaminating containers. Many of these methods are unique to the type of chemical previously contained by the container; e.g., a specific solvent should be used. As such, in the final regulations, the Agency has allowed persons to use alternative methods to decontaminate containers. The person may, however, be required to demonstrate that these methods are equivalent to triple rinsing.

One commenter suggested that the weight of the container itself be considered in establishing the small quantity generator exclusion limits proposed in §250.29. EPA does not agree since the size of the container, i.e., those containers which may be used by the public for other purposes--e.g., trash cans, barbecue pits, etc.--is the real concern not the weight of the container. However, the Agency does consider the weight of inner liners to be an important factor in setting a de minimis quantity and, thus, has given consideration to the weight of such inner liners in establishing the small quantity cut-offs for small quantity generators.

Listing of Spill Residues and Debris

One commenter urged that small amounts of contaminated spill clean-up residues and debris be excluded from the listing of these wastes under §250.14(a). The Agency has provided such an exclusion of less than 100 kilograms (220 pounds) for aggregate amounts of residue and contaminated debris resulting from the cleanup of a spill of any commercial cleaning product or manufacturing chemical intermediate having the generic name listed in §261.33(e). This exclusion is provided in §261.5(c)(5) and is discussed in the following section of this document.

Another commenter urged a more precise definition of spill clean-up debris to avoid including wrecked rail cars and damaged trucks as hazardous waste. The Agency does not know how to define debris to avoid the consequences noted by the commenter. It believes that it can rely on the reasonable implementation and enforcement of this provision by EPA and State personnel to avoid absurd results. The difficulty in providing a precise definition is that occasionally large equipment is severely contaminated by spilled material. For example, this could occur in a spill of toxaphene which is an extremely toxic chemical. The Agency assumes however, that in virtually all cases, heavy equipment can be decontaminated and need not become part of contaminated debris. If it cannot be decontaminated it must be treated as a hazardous waste.

Modification of the List of Chemicals

Several commenters urged that procedures be available to add to or delete from the list of chemicals in Appendices III, IV, V and XII. The Agency believes that revisions to the list of chemicals (now in §§261.33(e) and (f)of the Final Rules) should be achieved only through rulemaking. For this purpose and to enable modifications to other parts of the Subtitle C regulations, the Agency has provided procedures for petitioning the Agency to make revisions through rulemaking. These procedures are established in §260.20 of the Final Rules.

Importantly, deletions from the lists of chemicals in Appendix VIII and §261.33 are not available through the delisting procedures established in §260.22. The §260.22 delisting procedures are designed and intended to apply to individual generation sites to enable the administrative delisting of wastes that are fundamentally different from those listed in §§261.31 and 261.32. The primary difference would be that the waste did not contain the constituent of concern or contained it in such low concentrations that the waste was not hazardous. Other information could be provided by the generator to demonstrate significant differences in the persistence, bioaccumulation potential or mobility potential of the hazardous constitutent or significant differences in the quantity or composition of the wastes. The Agency does not believe that the chemicals and commercial products covered by §261.33 present many opportunities for fundamental differences because as commercial products their toxicity, concentration of toxic species, persistence, degradation potential and bioaccumulation potential are fairly well defined.

Spill residues of these materials might vary in concentration, of course. This fact led the Agency to establish larger quantity cutoffs for spill residues of the acutely hazardous materials listed in §261.33(e). Delisting procedures are not an appropriate manner of handling spill residues and debris because they generally present unique, rather than recurring, situations.

RECONSIDERATION OF THE PROPOSED RULES

Criteria for Listing

As discussed in the Background Document covering the criteria for listing hazardous waste and in response to the overall criticism by commenters on the proposed criterion for listing hazardous waste in §250.12(b)(2) of the Proposed Rules, the Agency has expanded and added considerable specificity to the criteria for listing hazardous waste in §261.11 of the Final Rules. One of the final criteria (§261.11(a)(2)), enables the Agency to list acutely toxic or otherwise acutely hazardous wastes in Subpart D and designate these wastes as Acute Hazardous Wastes (having a Hazard Code of H). This criterion enables the Agency to list a hazardous waste because it has been found to be fatal to humans in low doses or, in the absence of data on human toxicity, it has been shown in studies to have an oral LD50 toxicity (rat) of less than 50 milligrams per kilogram, an inhalation LC50 toxicity (rat) of less than 2 milligrams per liter, or a dermal LD50 toxicity (rabbit) of less than 200 milligrams per kilogram or is otherwise capable of causing or significantly contributing to an increase in seriously irreversible, or incapacitating reversible, illness. This change in the final criteria for listing establishes an explicit basis for the listing of hazardous waste in §261.33(e).*

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* However, this criterion also may be used by the Agency to list hazardous wastes in §§261.31 and 261.32.

The chemical substances listed in §261.33(f) do not meet the criteria for listing as an acutely hazardous waste but rather meet the criterion for listing, either because they satisfy §261.11(a)(1), exhibiting identified characteristics, or §261.11(a)(3), satisfying the criteria for listing as toxic. This latter criterion directs the Administrator to consider a list of factors to determine whether a waste containing toxic constituents listed in Appendix VIII is hazardous. The most important of these factors, and in the case of discarded or spilled commercial products, the decisive factor, is the nature of toxicity presented by the constituent of concern. This is because there is substantial indentity between the constituent of concern and the discarded product. In fact, in most cases the waste (i.e., the discarded product) essentially is the constituent of concern. Thus being the case, the remaining factors in §261.11(a)(3) are largely irrelevant to a listing determination.

In listing materials in §261.33(f), therefore, the Agency either will indicate that the listed material exhibits a characteristic, or will indicate the nature of toxicity posed by the constituent of concern.

Changes in the Listing of Chemicals

In response to comments, the lists of chemicals proposed as Appendices III, IV, V and XII have been combined and simplified. Section 261.33(e) is a listing of commercial chemical products or manufacturing chemical intermediates which because they pose a severe acute hazard in small quantities, must be managed as a hazardous waste in quantities at which most hazardous waste is exempted. Section 261.33(f) consists of hazardous substances for which the §261.5(a) and (b) small quantity exclusion limit is believed to be adequate to protect human health and the environment.

In addition, the Agency has substantially modified the final list of chemicals. First, it has listed only commercial chemical products or manufacturing chemical intermediates, chemicals that are not normally discarded. The reason for this is that §261.33 is exclusively designed to regulate these materials in the event they are discarded or intended to be discarded, are discarded as off-specification materials, are discarded as residuals in containers or inner liners of containers or are spilled. Where the Agency's interest in a chemical is because it is a hazardous constituent of a solid waste, the Agency will list the wastes or classes of wastes that typically or frequently contain such chemicals in §§261.31 and 261.32. The principal effect of this approach has been to eliminate, as a class, the chemicals listed in Appendix V which derived from a list of toxic chemicals that are typically found in industrial wastewaters, or as constituents of wastes.

The second major change has been to make the listing of chemicals under §261.33 of the Final Rules comport to the listing criterion of §261.11(a)(2) and (a)(3) i.e., those wastes which present an acute hazard or present a hazard to human health if improperly managed. Commercial chemical products or manufacturing chemical intermediates are not normally discarded. However the Agency is concerned with controlling those chemicals which when discarded, no matter how infrequently, could pose a potential hazard. The Agency, has thus restricted the present list of chemicals to only those which could present an hazard only to human health. Accordingly, under §261.33(e) only commercial chemical products or manufacturing chemical intermediates that have been found to be fatal to humans in low doses or, in the absence of data on human toxicity, have been shown in studies to have an oral LD50 toxicity (rat) of less than 50 milligrams per kilogram, an inhalation LC50 toxicity (rat) of less than 2 milligrams per liter, or a dermal LD50 toxicity (rabbit) of less than 200 milligrams per kilogram are listed in §261.33(e). This change has had the effect of removing the following groups from the proposed list: the ORM-A materials listed in Appendix IV of the Proposed Rules, the cancelled and RPAR review pesticides listed in Appendix III, and the known or suspected human carcinogens listed in Appendix XII of the Supplemental Proposed Rules.* Further, under §261.33(f) only those commercial chemical products or manufacturing chemical intermediates which may present a potential hazard to human health, if improperly managed and for which the Agency has sufficient data to make a determination are listed. Each chemical was individually reviewed to determine whether it met the acutely hazardous criterion of §261.11(a)(2), the toxic criterion of §261.11(a)(3), or met the identified characteristics of hazardous waste.

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*This change has not removed the Poison A and Poison B materials listed in Appendix IV because these are substances that have an LD50 or LC50 toxicity that meets the criterion for listing.

In summary, the combined effect of the two changes described has been to convert the original list of about 300 chemicals listed in Appendices III, IV, V and XII of the Proposed Rules to 122 chemicals in §261.33(e) and 239 chemicals in §261.33(f). Several of the substances in the proposed rules, for which data was lacking, are currently undergoing review to determine whether listing on either §261.33(e) or §261.33 (f) is appropriate. Appendix A to this document provides a tabular display of these changes.

Rationale for Selecting Acutely Hazardous Criteria

The chemicals on the promulgated list under §261.33(e) are listed because of one or more of the following criteria:

1. acute oral toxicity
2. acute inhalation toxicity
3. acute dermal toxicity
4. extreme reactivity (explosivity)
5. capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness

Chemicals listed for acute oral toxicity have been found to either be fatal to humans upon ingestion of ≤ 100 mg/kg or to have an oral LD50 toxicity to rats of less than 50 milligrams per kilogram. Chemicals that have these levels of toxicity are extremely powerful poisons. For example, ingestion of less than a teaspoonful of these chemicals would be fatal to an adult*. Additionally, lesser amounts can be expected to cause illness or even death to children and to more sensitive members of the population. As can be readily surmised, indiscriminate disposal of such chemicals could be highly dangerous. Any number of injury scenarios could result; e.g., accidental contact and ingestion by children or pets (not unlike situations at Love Canal); contamination of worker's clothing and resulting ingestion of small quantities rubbed off the clothing; and inadvertent contamination of foods or drinking water, particularly from residuals in containers or from spills. Because of the acute toxicity of these chemicals, the Agency has concluded that they very definitely meet the listing criteria of §261.11(a)(2) and also §261.11(a)(3).

The acute inhalation toxicity is based on an inhalation LC50 of less than 2 milligrams per liter. Chemicals having these levels of toxicity also are extremely effective poisons. For example, less than 0.2 ounces of such a material are sufficient to lethally contaminate the air of an average size (12' by 12' by 8') room. Indiscriminate disposal of such chemicals could result in any number of dangerous scenarios; e.g., contamination of the air in refuse collection bins and trucks posing a danger to workmen; subsurface migration of such chemicals into the basement of homes, resulting in injury to the inhabitants, such as occurred at Love Canal; contamination of the air of enclosed structures when salvaged containers having residues of these chemicals are opened; and injurious human exposure to these chemicals in certain spill or spill clean-up situations. Because of the acute toxicity of these chemicals, the Agency has concluded that they also, very definitely, meet the listing criteria of §261.11(a)(2) and also §261.11(a)(3).

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*Based on toxicity to rats and humans being the same. The human is considered generally to be more sensitive than the rat due to its higher surface to weight ratio. Using a surface-area weight relationship for the two species, the rat is expected to generally be only one-sixth as sensitive as the adult human.

The acute dermal toxicity is based on a skin absorption LD50 toxicity of less than 200 milligrams per kilogram. Like those above, chemicals having these levels of toxicity are extremely poisonous and both indiscriminate and uncontrolled discriminate disposal can pose injury scenarios similar to those described above. In fact, the dermal route of exposure is of major concern since, like inhalation, it can readily occur, as for example, as a result of contact of children and pets with the substance and contamination of worker's clothing. Accordingly, the Agency has concluded that these chemicals meet the listing criteria of §261.11(a)(2) and also §261.11(a)(3).

The Agency has used three sources of toxicological information in determining the LD50 and LC50 toxicities of chemicals. These are:

Research and Development Compendium, Part I, Materials Classification, Volume II Toxic & Corrosive Materials, 1976, U.S. Department of Transportation, Office of Hazardous Materials Operations, Materials Transportation Bureau, Washington, DC 20590.

Sax, N. Irving, Dangerous Properties of Industrial Materials, Fourth Edition, 1975, Van Nostrand Reinhold, New York, NY 10001.

Registry of Toxic Effects of Chemical Substances, Publication Number 78-104-B, September 1977, National Institute of Occupational Safety and Health, Cincinnati, OH 45226.

In using these references, the Agency has only used citations based on observed toxic effects in humans, rats, and rabbits.

The Agency has thus far been sparing in exercising its authority to list substances "capable of causing or significantly contributing to an increase in serious irreverisble, or incapacitating reversible illness." In the final rule, three compounds -- ammonium picrate, 2,4,6-trinitrophenol, and tetranitromethane -- are listed in §261.33(e) on this basis. These compounds are extremely reactive; they explode under standard temperatures and pressures. A mild shock is sufficient to cause an explosion. The Agency therefore believes that these compounds are properly includible as acutely toxic wastes, and should, when discarded be subject to the lower exclusion limit.

Listing of Containers*

Section 261.33(c) of the Final Rules has been expanded to address the comments on triple rinsing. As now written, triple rinsing with a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate is the standard for Subtitle C regulations by which a container can be rendered non-hazardous. The limit for containers only applies to the acutely hazardous materials listed in §261.33(e) because the residue of these substances in containers may be lethal in such quantities. For the other hazardous materials listed in §261.33(f), the containers may not prove hazardous, and EPA lacks the data to take a general position on this. The regulation does not specify the type of solvent to be used in triple rinsing containers. Different solvents may cleanse chemical product containers with varying results, and it was impossible for EPA to require the use of a particular solvent for all containers. In this respect, this Rule is similar to the general disposal requirements for pesticide containers promulgated under FIFRA. (See 40 CFR §165.9(a)). In response to comments, EPA has increased the flexibility of the Rule by allowing a person to use alternative methods to decontaminate a container, if the person can demonstrate that such methods achieve equivalent results. For example, government regulations may authorize a person to incinerate combustible containers under certain conditions (cf. 40 CFR §165.9(a)), or a manufacturer may recommend that such disposal be employed. Several commenters noted that certain paper containers could not be triple-rinsed. EPA did not, through these regulations, want to prevent people from using these disposal techniques. The Agency is aware that requiring "equivalent" decontamination procedures without specifying solvents or procedures provides, at best, a vague standard. The Agency believes that, in most cases, this rule, if interpreted sensibly, provides sufficient guidance to both the regulated community and Agency enforcement personnel. For most containers, the manufacturer will specify a particular solvent, or it will be assumed that water is the appropriate solvent. Unless the knowledge is already extant--e.g., through manufacturer recommendations--it would appear that most persons would triple-rinse with water or other dilution liquid rather than conduct tests to determine the equivalency of their procedures. Accordingly, EPA expects that this alternate procedure will not be widely used and that triple-rinsing will be the standard cleansing procedure.

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*Note: Certain portions of the discussion in this section have been supreceded by clarifying amendments dealing with containers, container liners, and the contained residue. See 45 FR 78254 (November 25, 1980), adopting a new §261.7 and a revised §261.33(c).

Public comments on Part 250, Subpart D of the Proposed Rules raised questions about how the regulations should deal with inner liners of containers and containers from which the inner liners have been removed. The resulting reconsideration is reflected in §261.33(c) as well as in other parts of the regulation. Basically, inner liners from containers used to hold chemicals listed in §261.33(e) are treated like containers and are hazardous wastes when discarded unless triple rinsed or equivalently decontaminated.* On the other hand, containers from which the inner liner has been removed need not be considered as a hazardous waste when discarded.

Listing of Spill Residues and Debris

As previously discussed and in response to comments, the final listing of spill clean-up residues and debris has been modified to clarify that only contaminated debris, including contaminated water and soil, is covered. Also, a provision has been added to limit this listing to aggregate amounts of clean-up residues and debris that exceed 100 kilograms (220 pounds). This *de minimis* quantity is based on the Agency's best judgment of an amount that will not overburden the Subtitle C hazardous waste management system, (including its implementation and enforcement) and, further, will not pose a significant risk to human health or the environment. Based on the Agency experience with the cleanup of spills,

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* Typically, inner liners are not decontaminated and reused; they are removed from the container and discarded.

100 kilograms--half a drum--for acutely hazardous wastes is a very small amount and would only apply to very small or very limited spills. Given the acute hazardousness of the chemicals listed in §261.33(e), the Agency does not believe this quantity is too low. In fact, there may be cases where lesser amounts pose substantial hazard. In such cases, the Agency believes it can rely on the discretion exercised by the trained personnel that typically respond to spills to require proper management of these lesser amounts.

De Minimis Quantity Cut-Off for Small Quantities of Acutely Hazardous Materials

As discussed in a separate Background Document, §261.5 of the Final Rules excludes from Subtitle C regulation hazardous wastes that are generated, treated or disposed of in quantities less than 1,000 kilograms (2,200 pounds) in any 30-day period by individual small quantity generators. The Final Rules further provide that this 1,000 kilogram exclusion eventually will be lowered to 100 kilograms (220 pounds) in any 30-day period. The Agency has concluded that, whereas this exclusion may be appropriate and justified as a general exclusion for the variety of hazardous wastes listed in Subpart D, it is not appropriate for the acutely toxic and hazardous wastes listed in §261.33(e). These quantity limits do apply to chemical products listed in §261.33(f). Consequently, §261.5(c) of the Final Rules provides lesser exclusion limits for the commercial products listed in §261.33(e).

For commercial chemical products, manufacturing chemical intermediates and off-specification species listed in §261.33(e), the *de minimis* quantity cut-off is one kilogram (2.2 pounds) in any calendar month, as provided in §261.5(c). Small quantity generators who discard more than one kilogram of these chemicals in any calendar month period must designate such chemicals as hazardous wastes and these must be managed as hazardous wastes by the generator and all other persons (transporters and owners or operators of off-site treatment, storage or disposal facilities). This quantity, in the Agency's best judgment, will reduce the risk to human health and the environment, from the discarding of these wastes, to a very low level (the limit of only one kilogram is a stringent requirement for persons handling these products in the course of business). The Agency recognizes that lesser quantities of these chemicals can be hazardous. As indicated above, only a few ounces of these chemicals can be lethal or injurious. At the same time, the Agency recognizes the implementation and enforcement of small quantity requirements will be difficult. It will be difficult to inform all potential generators of the final requirements and it will be virtually impossible to monitor and police the discarding of small quantities. The Agency has balanced these two competing consequences and has concluded that the quantity selected is a reasonable compromise, particularly when it applies only to small quantity generators. These de minimis quantities do not apply to other generators who must manage all quantities of §261.33 commercial products as hazardous wastes.

For containers (except the inner liner of containers that have been removed) that are not triple rinsed or otherwise decontaminated, §261.5(c)(3) provides that the de minimis quantity threshold is a container size of 20 liters (5.3 gallons). Persons who discard larger containers must manage them as hazardous waste. The Agency chose 20 liters because it believed that there was a larger probability that such containers, when discarded, might be salvaged for use as trash cans, barbecue grills, storage containers and other items where human exposure and consequential injury could occur. It reasoned that there would be a lesser probability of salvaging of small containers because there is less utility for such containers.

For inner liners of containers which have been removed and are discarded; §261.5(c)(4) provides a de minimis quantity cut-off of 10 kilograms (22 pounds). The same reasoning as used for the pure chemicals and off-specification materials was used except that adjustment was made for the assumed weight of the liner. Again, the decision was based on the Agency's best estimate about the probable risk of injury.

For the clean-up residues and debris from spills, §261.5(c)(5) provides a 100 kilogram (2,200 pound) de minimis quantity cut-off (per spill event). The rationale for this choice is discussed previously in this document.

Bibliography

1. U.S. House of Representatives, Report 94-1491, p. 22.

2. Decontamination of Non-Combustible Agricultural Pesticide Containers by Removal of Emulsifiable Parathion by Dennis P. H. Hsich, Thomas E. Archer, Douglas M. Munnecke, and Francis E. McGowan, Environmental Science & Technology, 6:9, September 1972, p. 826

3. Detoxication of Metal Drums from Emulsifiable Concentrate Formulations of Parathion, by E.E. Archer and D.P.H. Hsich. Pesticide Science, 4, 69-76, 1973.

4. Pesticide Container Decontamination by Aqueous Wash Procedures, by J. G. Lamberton, P.A. Thomson, J.M. Witt, and M. L. Deinzer, Bulletin of Environmental Contamination and Toxicology, 16:5, November 1976.

5. "Drum Rinse Efficiency and Drum Disposal," a paper presented by the U.S. Air Force at the Herbicide Orange disposal (public hearing on April 7, 1977).

APPENDIX A

BASIS FOR INCLUSION ON §261.33(e)

Source of Toxicity Data

(1) Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH 45226, September 1977.

(2) Research and Development Compendium, Part 1 Materials Classification, Volume II Toxic and Corrosive Materials, U.S. Department of Transportation, Washington, DC 20590, April 1976.

(3) Dangerous Properties of Industrial Materials, Fifth Edition, N. Irving Sax, Van Nostrand Reinhold, New York, NY 10020

Final Disposition and Reason for Dropping from 261.33(e) or Appendix VIII

X	The substance has been included under the indicated section of the regulation.
C	Material is under consideration for possible future listing in 261.33(e) or Appendix VIII
NS	Description of material is not specific enough to permit a generator of solid waste to unambiguously identify a given industrial material as one of the substances included in the listing.
F	Available toxicological information indicates that the substance does not meet the criteria for listing under Appendix VIII or 261.33(e).

Reason for Listing

Oral	Material has been shown to be fatal to humans with an oral dose of $\leq$100 mg/Kg or has an oral rat LD_{50} of $\leq$50 mg/Kg.
Inhalation	Material has been shown to be fatal to humans exposed to concentrations of $\leq$2 mg/1 or the material has an inhalation rat LC_{50} of $\leq$2 mg/1/hour.
Dermal	Material has been shown to be fatal to humans exposed with a dermal exposure of $\leq$200 mg/Kg or to has a dermal rabbit LD_{50} of $\leq$200 mg/Kg.
Explosive	Material is either a Class A or Forbidden Explosive as defined by the U.S. Department of Transportation, Washington, DC 20590.

Commercial Product

T	Toxic Substances Control Act Chemical Substances Inventory, May 1979, U.S. Environmental Protection Agency, Washington, DC 20460
S	Dangerous Properties of Industrial Materials, Fifth Edition, N. Irving Sax, Van Nostrand Reinhold, New York, NY 10020.
P	Designates a material registered with the U.S. Environmental Protection Agency for use as a pesticide.
FDA	Designates a material approved for use as a drug by the U.S. Food and Drug Administration.
D	Designates a material listed by name in regulations of the Department of Transportation (49 CFR 172.101, "Table of Hazardous Materials").
USAF	United States Air Force military product designation

APPENDIX III OF PROPOSED REGULATION

		Final Disposition			Toxicity Data(1)					
Name	Hazardous Waste No.	.33e	VIII (4)	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/1)	Dermal LD50 (mg/kg)	Commercial Product (2)	Reason on 261.33e(3)	Reason Dropped(4)
Aramite			X		Rat 3900 (N)					
BAAM			C		Rat 811 (N)					
Benomyl			C			Rat 10/hr (N)				
Chloranil			C		Rat 4000 (N)					
Chlorobenzilate	U038		X		Rat 700 (N)					
Diallate	U062		X		Rat 395 (N)					
1,2-Dibromo-3-chloro-propane (DBCP)	U066		X		Rat 2450 (N)					
Dimethoate	P044	X	X		Human 30 (N)			P	Oral	
EBDC			C							
Kepone	U142		X		Rat 95 (N)					

Name	Hazardous Waste No.	Final Disposition .33e	Final Disposition VIII	Final Disposition dropped	Toxicity Data(1) Oral LD50 (mg/kg)	Toxicity Data(1) Inhalation LC50 (mg/l)	Toxicity Data(1) Dermal LD50 (mg/kg)	Commercial Product (2)	Reason on 261.33e(3)	Reason Dropped(4)
Maleic hydrazide	U148		X		Rat 3800 (N)					
Mirex			C		Rat 306 (S)					
Monuron			C		Rat 1480 (N)					
Octamethylpyrophosphoramide (OMPA)	P085	X	X		Rat 5 (N)			P	Oral	
Pentachloronitrobenzene (PCNB)	U185		X		Rat 1650 (N)					
Phenarzine Choride			C							
Polychorinated terpenyls			X							
1,3-Propane sultone (Pronamide)	U193		X							
Strobane			C		Rat 200 (N)					
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)	U232		X		Rat 300 (N)					
Thiophonate methyl			C							

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)					
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/l)	Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
Trysben			C		Rat 650 (N)					
Fluoroacetic acid, Na salt (1080)	P058	X	X		Rat 0.22 (N)			P	Oral	
2-Fluoroacetamide 1081	P057	X	X		Rat 5.75 (N)			P	Oral	

APPENDIX IV OF PROPOSED REGULATIONS

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)					
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/l)	Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
Acetaldehyde ammonia				X						F
Acetone cyanohydrin	P069	X	X		Rat 17 (N)			T	Oral	
Acetone tetrabromide				X						F
Allethrin			C		Rat 920 (N)					
Ammonium hydrosulfide solution				X						F
Ammonium polysulfide solution				X						F
Aniline (aniline oil)	U012		C		Rat 440 (N)					
Antimony lactate			X							
Antimony potassium tartrate			X		Rat 115 (N)					
Antimony sulfide			X							

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)			Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/l)	Dermal LD50 (mg/kg)			
Barium cyanide	P013	X	X		Rat 118 (N)	see cyanide		D	Inhalation	
Beryllium dust	P015	X	X			Toxic to Humans (S)			Inhalation	
Bone oil				X						F
Bromoacetone	P017	X	X			Human 5.7/10min (D)		D	Inhalation	
Brucine	P018	X	X		Rat 1 (N)			T	Oral	
Calcium cyanide(1)	P021	X	X		Rat 39 (N)			T	Oral	
Camphene				X						F
Carbaryl			C		Rat 400 (N)					
Carbolic acid (phenol)	U188		X		Rat 414 (N)					
Carbon tetrachloride	U211		X		Rat 2800 (N)					

1. Includes solid and mixtures of Calcium cyanide

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)					
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/1)	Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
Chemical ammunition nonexplosive (containing Poison B)				X						NS
Chemical ammunition nonexplosive (containing poison A)				X						NS
Chloroform	U044		X		Rat 800 (N)					
4-Chloro-o-toluidine hydrochloride			C					T		
Chloropicrin (2)			C		Rat 250 (N)					
Cocculus(fishberry)			C							
Weed or tree killing compound				X						NS
Copper cyanide	P029	X	X		see cyanide				Inhalation	
Cyanides	P030	X	X			Toxic to Humans (S)			Inhalation	

2. Includes chloropicrin mixtures (i.e., absorbed, Methyl chloride mixtures, liquid, mixture containing no compressed gas or poison A liquid)

Name	Hazardous Waste No.	Final Disposition .33e	Final Disposition VIII	Final Disposition dropped	Toxicity Data(1) Oral LD50 (mg/kg)	Toxicity Data(1) Inhalation LC50 (mg/l)	Toxicity Data(1) Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
Cyanogen bromide	P032	X	X			Human 0.92/10min (D)		D	Inhalation	
Cyanogen chloride	P033	X	X			Rat 1.18/30min (D)		D	Inhalation	
DDT	U061		X		Rat 113 (N)					
Diazinon			C		Rat 76 (N)					
Dibromodifluoromethane			C							
o-Dichlorobenzene	U070		X		Rat 500 (N)					
p-Dichlorobenzene	U072		X		Rat 500 (N)					
Dichlorodifluoromethane	U075		X							
Dichloromethane	U080		X		Rat 945 (N)					
2,4-Dichlorophenoxy acetic acid	U240	X	X		Human 80 (N)			P	Oral	

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)			Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/l)	Dermal LD50 (mg/kg)			
Dieldrin	P037	X	X		Rat 46 (N)			P	Oral	
Dinitrobenzene			X							
Dinitrochlorobenzene			C		Rat 1070 (D)					
Dinitrocyclohexyl phenol [2-cyclohexyl 4,6-dinitrophenol]	P034	X	X		Human LDLo 50 (N)			D	Oral	
Dinitrophenol	P048		X		Rat 100 (D)					
Disinfectant (3)				X						NS
Drugs n.o.s. (3)				X						NS
Ethylene chlorohydrin			C		Rat 58 (N)					
Ethylene dibromide (1,2-Dibromoethane)	U067		X		Rat 140 (N)					
Ferrophosphorus				X						NS

3. liquid and solid

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)			Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/l)	Dermal LD50 (mg/kg)			
Flue dust				X			-			NS
Formaldehyde	U122		X		Rat 800 (N)					
Germane			C							
Grenade without bursting charge poison A				X						NS
Grenade without bursting charge poison B				X						NS
Hexachloroethane	U131		X							
Hexaethyltetraphosphate (4)	P062	X	X		Rat 5 (D)			D	Oral	
Hydrocyanic acid	P063	X	X		see cyanide			T	Inhalation	
Insecticide				X						NS

4. Including mixtures containing hexaethyl tetraphosphate; dry and liquid

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)			Commercial Product (2)	Reason on 261.33e(3)	Reason Dropped(4)
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LD50 (mg/l)	Dermal LD50 (mg/kg)			
London blue			C							
Malathion			C		Rat 1401 (N)					
Medicines n.o.s.(5)				X						NS
Mercaptan			X							
Methyl bromide (6)	U029		X			Rat 23 (D)				
Methyl chloroform	U226		X		Rat 14300 (N)					
Methyl parathion (7)	P071	X	X		Rat 9 (N)	Rat 1.2 (N)		P	Oral Inhalation	
Mipafox			C							
Motor fuel antiknock compound				X						NS

5. Liquid and solid
6. Including methyl bromide mixtures
7. Includes methyl parathion containing mixtures (i.e., methyl parathion mixture, dry, methyl parathion, liquid mixture, containing over 25% methyl parathion)

Name	Hazardous Waste No.	Final Disposition: .33e	Final Disposition: VIII	Final Disposition: dropped	Toxicity Data(1): Oral LD50 (mg/kg)	Toxicity Data(1): Inhalation LC50 (mg/l)	Toxicity Data(1): Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
Napthalene	U165		X		Rat 1780 (N)					
Nickel cyanide	P074	X	X		see cyanide				Inhalation	
Nicotine and its salts	P075	X	X		Human 1 (D) (est)		Rabbit 50 (N)		Oral Dermal	
Nitric oxide	P076	X	X			Toxic to Humans (S)		D	Inhalation	
p-Nitroaniline	P077	X	X		Human LDLo 5 (S)			T	Oral	
Nitrobenzene	U169		X		Rat 640 (N)					
o-Nitrochlorobenzene			X		Rat 288 (N)					
m-Nitrochlorobenzene			X		Mouse 390 (N)					
p-Nitrochlorobenzene			X		Rat 420 (N)					
Nitrogen dioxide	P078	X	X		see nitric oxide			D	Inhalation	
Nitrogen peroxide	P079	X	X		see nitric oxide			D	Inhalation	

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)			Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped (4)
		.33e	VIII	dropped	Oral LD50 (mg/kg	Inhalation LC50 (mg/1)	Dermal LD50 (mg/kg)			
Nitrogen tetroxide	P080	X	X		See ~~nitric oxide~~ nitrogen dioxid			D	Inhalation	
Nitroxylol			C		Rat 2440 (N)					
Organic phosphate (generic)				X						NS
Parathion and mixture	P089	X	X		Human LDLo .24 (S)		Rabbit 40 (S)	P	Dermal Oral	
Perchloro-methyl-mercaptan			C		Rat 83 (N)					
Perfluoro-2-butene			X							
Phencapton			C		Rat 61 (N)					
Phenyl dichloroarsine	P091	X	X				Rabbit 0.5 (N)	T	Dermal	
m-,p-Phenylenediamine			C							
Phosgene (diphosgene)	P095	X	X			Human 3 (N)		D	Inhalation	

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)			Commercial Product (2)	Reason on 261.33e(3)	Reason Dropped (4)
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/l)	Dermal LD50 (mg/kg)			
Phosphine	P096	X	X			Rat 0.11/4hr (N)		T	Inhalation	
Poisonous liquid, n.o.s., or poison B liquid, n.o.s				X						NS
Poisonous liquid or gas n.o.s.				X						NS
Poisonous solid, n.o.s. or poison B solid, n.o.s.				X						NS
Potassium cyanide	P098	X	X		see cyanide			D	Inhalation	
Potassium cyanide, solution	P098	X	X		see cyanide			D	Inhalation	
Silver cyanide	P104	X	X		see cyanide			D	Inhalation	
Sodium azide	P105	X	X					T	Explosive	
Sodium cyanide	P106	X	X		see cyanide			D	Inhalation	
Sodium cyanide, solution	P106	X	X		see cyanide			D	Inhalation	

Name	Hazardous Waste No.	Final Disposition .33e	Final Disposition VIII	Final Disposition dropped	Toxicity Data(1) Oral LD50 (mg/kg)	Toxicity Data(1) Inhalation LC50 (mg/l)	Toxicity Data(1) Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
Sodium dichromate			C							
Sodium penta-chlorophenate			C		Rat 210 (N)					
Strontium arsenite			C							
Strontium sulfide	P107	X	X		Human LDLo 50 (N)				Oral	
Tetrachloroethane	U208/209		X							
Tetrachloroethylene (Perchlorethylene)	U210		C		Mouse 8850 (N)					
Tetraethyldithiopyro-phosphate	P109	X	X		Rat 5 (D)			D	Oral	
Tetraethyl lead	P110	X	X			Rat 0.58/hr(D)		T	Inhalation	
Tetraethylpyro-phosphate	P111	X	X		Rat 1.2 (D)			D	Oral	
Tetramethyl methylene diamine			C							

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)					
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/l)	Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
Thallium salt, solid n.o.s.		X	X		Toxic to Humans (S)			D		
Thallium sulfate	P115	X	X		Rat 15.8 (S)			T	Oral	
Thiophosgene			X		Rat 929 (N)					
Thiuram (Thiram)	P117			X	Human LDLo 50 (N)			D	Oral	
Toluenediamine	U221		C							
Trichloroethylene	U228		X		Rat 4920 (N)					
Zinc cyanide	P121	X	X		see cyanide			D		

APPENDIX V OF PROPOSED REGULATIONS

Name	Hazardous Waste No.	Final Disposition .33e	Final Disposition VIII	Final Disposition dropped	Toxicity Data(1) Oral LD50 (mg/kg)	Toxicity Data(1) Inhalation LC50 (mg/1)	Toxicity Data(1) Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
Acenaphthene			X							
Acenaphthalene			X							
Acrolein	P003	X	X		Rat 46 (N)	Rat .08/4hr (D)		T	Oral Inhalation	
Acrylonitrile	U009		X		Rat 82 (N)					
Aldrin	P004	X	X		Rat 67 (N)		Rabbit LDLo 15 (N)	P	Dermal	
Anthracene			X							
alpha-BHC			X		Rat 500 (N)					
beta-BHC			X		Rat 6000 (N)					
delta-BHC			X		Rat 88 (N)					
Benzene	U019		X		Rat 3800 (N)					

Name	Hazardous Waste No.	Final Disposition .33e	Final Disposition VIII	Final Disposition dropped	Toxicity Data(1) Oral LD50 (mg/kg)	Toxicity Data(1) Inhalation LC50 (mg/1)	Toxicity Data(1) Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
Benzidine	U021		X		Rat 309 (N)					
Benzo(a)anthracene (1,2 benzanthracene)	U018		X							
Benzo(c)fluroranthene (3,4-benzofluoro-anthene)			C							
Benzo(k)fluoroanthene (11,12,benzofluoranthene)			X							
Benzo(g,h,i)perlyene (1,12-Benzoperylene)			X							
Benzo(a)pyrene (3,4-benzopyrene)	U022		X							
Bis(2-chloroethoxy) methane	U024		X							
Bis(2-chloroethyl) ether	U025		X		Rat 75 (N)					
Bis(2-chloroisopropyl) ether	U027		X		Rat 240 (N)					
Bis(chloromethyl) ether	P016	X	X		Rat 210 (N)	Rat 0.07/7hr (N)		T	Inhalation	

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)			Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/l)	Dermal LD50 (mg/kg)			
Bis(2-ethylhexyl) phthalate	U028		X		Rat 31000(S)					
Bromoform (Tribromromethane)			X							
4-Bromophenyl phenyl ether	U030		X							
Butyl benzyl phthalate			X							
Chlordane (technical mixtures and metabolites)	U036		X		Rat 283 (N)					
Chlorobenzene			X		Rat 2910 (N)					
p-Chloro-m-cresol	U039		X							
Chlorodibromomethane	U040		X							
Chloroethane			X							
2-Chloroethyl vinyl ether	U042		X		Rat 250 (N)					

Name	Hazardous Waste No.	Final Disposition .33e	Final Disposition VIII	Final Disposition dropped	Toxicity Data(1) Oral LD50 (mg/kg)	Toxicity Data(1) Inhalation LC50 (mg/l)	Toxicity Data(1) Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
2-Chloronaphthalene	U047		X		Rat 2078 (N)					
2-Chlorophenol	U048		X		Rat 670 (S)					
4-Chlorophenyl phenyl ether			X							
Chrysene	U050		X							
Dibenzo(a,h)anthracene (1,2,5,6-dibenzanthracene)	U063		X							
Di-n-butyl phthalate	U069		X							
1,3-Dichlorobenzene	U071		X							
3,3'-Dichlorobenzidene	U073		X							
Dichlorobromomethane			X							
Dichlorodifluoromethane	U075		X							
1,1-Dichloroethane	U076		X		Rat 725 (N)					

Name	Hazardous Waste No.	Final Disposition .33e	Final Disposition VIII	Final Disposition dropped	Toxicity Data(1) Oral LD50 (mg/kg)	Toxicity Data(1) Inhalation LC50 (mg/l)	Toxicity Data(1) Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped (4)
1,2-Dichloroethane	U077		X		Rat 680 (N)					
1,1-Dichloroethylene	U078		X		Rat 725 (N) [illegible]					
trans-1,2-Dichloroethylene	U079		X		[illegible]					
2,4-Dichlorophenol			X		Rat 580 (N)					
1,2-Dichloropropane	U083		X		Rat 1900 (N)					
1,2-Dichloropropylene (1,2-Dichloropropene)			C							
Diethyl phthalate	U088		X							
Dimethyl phthalate			X		Rat 6900 (S)					
2,4-Dimethylphenol	U101		C							
4,6-Dinitro-o-cresol	P047	X	X		Rat 33 (D)			D	Oral	
2,4-Dinitrotoluene	U105		X		Rat 707 (N)					

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)			Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/1)	Dermal LD50 (mg/kg)			
2,6-Dinitrotoluene	U106		X							
1,2-Diphenylhydrazine	U109		X							
Endosulfan and metabolites(8)	P050	X	X		Rat 18 (N)		Rabbit 167 (N)	P	Dermal	
Endrin aldehyde			X							
Ethylbenzene			X		Rat 3500 (N)					
Fluoranthene	U120		X		Rat 2000 (N)					
Fluorine	P056	X	X			Rat 1.85/hr(N)		T	Inhalation	
Heptachlor	P059	X	X		Rat 40 (N)			P	Oral	
Heptachlor epoxide			X		Rat 62 (N)					
Hexachlorobenzene	U127		X		Rat 3500 (N)					
Hexachlorobutadiene	U128		X		Rat 90 (N)					

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8. Includes alpha and beta isomers and sulfate salt

Name	Hazardous Waste No.	Final Disposition .33e	Final Disposition VIII	Final Disposition dropped	Toxicity Data(1) Oral LD50 (mg/kg)	Toxicity Data(1) Inhalation LC50 (mg/1)	Toxicity Data(1) Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
Hexachlorocyclopentadiene	U130		X		Rat 280 (S)					
Indeno(1,2,3-c,d) pyrene [,3-o-phenylenepyrene]	U137		X							
Isophorone			X		Rat 2330 (N)					
Methyl chloride	U045		X							
2-Nitrophenol			X		Rat 2828 (D)					
4-Nitrophenol	U170		X		Rat 350 (N)					
N-Nitrosodi-n-propylamine	U175		X		Rat 480 (S)					
N-Nitrosodimethylamine	P082	X	X		Rat 26 (S)	Rat 0.78/4hr (S)		T	Inhalation Oral	
N-Nitrosodiphenylamine				X						
Di-n-octyl phthalate	U107		X							
PCB-1242(Arochlor 1242)			X		Rat 4250 (N)					

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)					
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/l)	Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
PCB-1254(Arochlor 1254)			X		Rat 4250 (N)					
PCB-1221(Arochlor 1221)			X		Rat 3980 (N)					
PCB-1232(Arochlor 1232)			X		Rat 4470 (N)					
PCB-1248(Arachlor 1248)			X		Rat 11000(N)					
PCB-1260(Arochlor 1260)			X		Rat 1315 (N)					
PCB-1016(Arochlor 1016)			X							
Pentachlorophenol	U242	X	X		Rat 50 (N)			T	Oral	
Phenathrene			X							
Pyrene			X							
2,3,7,8-Tetrachorodibenzo-p-dioxin (TCDD)			X		Rat 0.114(N)					
1,2,4-Trichlorobenzene			X		Rat 756 (N)					

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)			Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/l)	Dermal LD50 (mg/kg)			
1,1,1-Trichloroethane	U226		X		Rat 14300(N)					
1,1,2-Trichloroethane	U227		X		Rat 1140 (N)					
Trichlorofluoromethane	U121		X							
2,4,6-Trichlorophenol	U231		X		Rat 820 (S)					
Toluene	U220		X		Rat 500 (N)					
Vinyl chloride (chloroethylene)	U043		X		Rat 500 (N)					

APPENDIX XII OF PROPOSED REGULATIONS

		Final Disposition			Toxicity Data(1)					
Name	Hazardous Waste No.	.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/1)	Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
Aflatoxins			C							
4-Aminobiphenyl			X		Rat 500 (N)					
Auramine	U014		X							
Benz(c)acridine			X							
Benzo(e)pyrene			C							
N,N-Bis(2-chloroethyl)-2-naphthylamine	U026		X							
Chloromethyl methyl ether	U046		X		Rat 816 (N)	Rat 55/7hr (N)		T		
Cyclophosphamide	U058	C	X		Rat 94 (N)					
Dibenz(a,h)acridine			X							
Dibenz(a,j)acridine			X							
7h-Dibenzo(c,g)carbozale			X							

Name	Hazardous Waste No.	Final Disposition .33e	Final Disposition VIII	Final Disposition dropped	Toxicity Data(1) Oral LD50 (mg/kg)	Toxicity Data(1) Inhalation LC50 (mg/1)	Toxicity Data(1) Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped(4)
Dibenzo(a,h)pyrene			X							
Dibenzo(a,i)pyrene	U064		X							
Diethylstilbestrol			X							
Melphalan	U150		X							
2-Napthylamine	U168		X		Rat 727 (S)					
N-Nitrosopiperidine	U179		X		Rat 200 (N)					
N-Nitrosodi-n-butylamine	U172		X		Rat 1200 (N)					
N-Nitrosodiethanolamine	U173		X							
N-Nitrosodiethylamine	U174		X							
N-Nitroso-n-ethylurea	U176		X							

Name	Hazardous Waste No.	Final Disposition .33e	Final Disposition VIII	Final Disposition dropped	Toxicity Data(1) Oral LD50 (mg/kg)	Toxicity Data(1) Inhalation LC50 (mg/l)	Toxicity Data(1) Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped (4)
N-Nitrosomethylvinylamine	P084	X	X		Rat 24 (N)			T	Oral	
N-Nitroso-n-methylurea	U177		X		Rat 180 (N)					
N-Nitrosomorpholine			X		Rat 282 (N)					
N-Nitrosonornicotine			X							
N-Nitrosopyrrolidine	U180		X		Rat 9000 (S)					
N-Nitrososarcosine			C		Rat 5000 (N)					
Oxymethenolone			X							
Phenacetin	U187		X		Rat 1650 (N)					
Phenytoin				X						F
Polyvinyl pyrrolidine				X						F
Streptozotocin			X		Mouse 264 (N)					

ADDITIONS TO §261. .(e) NOT PREVIOUSLY PROPOSED

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)			Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped (4)
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/1)	Dermal LD50 (mg/kg)			
Acetato-o-phenyl mercury	P092	X	X		Rat 30 (N)			T	Inhalation	
3-alpha-Acetonylbenzyl-4-hydroxycoumarin	P001	X	X		Rat 3 (N)			T	Oral	
1-Acetyl-2-thiourea	P002	X	X		Rat 50 (N)			USAF EK-4890	Oral	
Allyl alcohol	P005	X	X		Rat 6.4 (N)	Rat 1.7/4hr		T	Inhalation Oral	
Aluminum phosphide	P006	X	X		Human 20 (N)			T	Oral	
5-Aminomethyl-3-isoxazol	P007	X	X		Rat 45 (N)			T	Oral	
4-Aminopyridine (9)	P008	X	X		Rat 21 (N)			T	Oral	
Ammonium picrate	P009	X	X					T	Explosive	
Arsenic acid	P010	X	X		Human LCLo 5 (N)			S	Oral	
Arsenic pentoxide	P011	X	X		Human LCLo 5 (N)			D	Oral	
Arsenic trioxide	P012	X	X		Human LCLo 5 (N)			D	Oral	

9 Includes organic and inorganic compounds

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)					
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/1)	Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped (4)
Benzenethiol	P014	X	X		Rat 46 (N)	Rat 33/4hr (N)		T	Inhalation Oral	
2-Butanone peroxide	P019	X	X		Rat 1 (N)			T	Oral	
2-sec-Butyl-4,6-dinitrophenol	P020	X	X		Rat 25 (N)	Rat 2/4hr (N)		T	Oral Inhalation	
Carbon disulfide	P022	X	X		Human LDLo 14 (S)			D	Oral	
Chloroacetaldehyde	P023	X	X		Rat 21 (N)			T	Oral	
p-Chloroaniline	P024	X	X			Human LCLo 0.44 (S)		S	Inhalation	
1-(p-Chlorobenzoyl)-5-methoxy-2-methyl-indole-3-acetic acid	P025	X	X		Rat 12 (N)			T	Oral	
1-(o-Chlorophenyl)thiourea	P026	X	X		Rat 4.6 (N)			T	Oral	
3-Chloropropionitrile	P027	X	X		Rat 50 (N)			T	Oral	
alpha-Chlorotoluene	P028	X	X		Rat 1231 (N)	Human LCLo.16/M (N)		D	Inhalation	
Cyanogen	P031	X	X			Human LCLo.16(N)		D	Inhalation	

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)			Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped (4)
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/l)	Dermal LD50 (mg/kg)			
Diethylarsine	P038	X	X			Human LCLo .03 (S)		S	Inhalation	
O,O-Diethyl-O-pyrazinyl-phosphorothioate	P040	X	X		Rat 3.5 (N)			T	Oral	
O,O-Diethyl phosphoric acid O-p-nitrophenyl ester	P041	X	X		Rat 1.8 (N)			P	Oral	
3,4-Dihydroxy-alpha-(methylamino)methyl-benzyl alcohol	P042	C	C					T		
Di-isopropylfluoro-phosphate	P043	X	X		Rat 6 (S)			S	Oral	
3,3-Dimethyl-1-(methylthio)-2-butanone-O-(methyl-amino carbonyl) oxime	P045	X	X		Rat 8.5 (N)			P	Oral	
alpha,alpha-Dimethylphen-ethylamine	P046	X	X		Human LDLo 50 (N)			NIOSH "Dye"	Oral	
2,4-Dinitrophenol	P048	X	X		Rat 30 (N)			T	Oral	
Disulfoton	P039	X	X		Human LDLo 5 (N)			P	Oral	

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)					
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LC50 (mg/l)	Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped (4)
Dithiobiuret	P049	X	X		Rat 5 (N)			T	Oral	
Endrin and metabolites	P051	X	X		Rat 3 (N)		Rabbit LDLo 94 (N)	P	Oral Dermal	
Ethylcyanide	P101	X	X		Rat 39 (S)			S	Oral	
Ethylenediamine				X	Rat 1600					
Ethylenimine	P054	X	X		Rat 15 (N)			T	Oral	
Ferric cyanide	P055	X	X		see cyanide			T	Inhalation	
1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahyro-, endo, endo-1,4:5,8-dimethanonaphthalene	P060	X	X		Rat 7 (N)			T	Oral	
Hexachloropropene	U243	X	X			Rat 4/30min (N)		T	Inhalation	
Isocyanic acid, methyl ester	P064	X	X		Rat 71 (N)	Rat .05/4hr(N)		T	Inhalation	
Methomyl	P066	X	X		Rat 17 (N)	Rat 0.77 (N)		P	Oral Inhalation	
2-Methylaziridine	P067	X	X		Rat 19 (S)			(S)	Oral	
Methyl hydrazine	P068	X	X		Rat 33 (N)	Rat .74/4hr(N)		T	Oral Inhalation	

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)			Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped (4)
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LD50 (mg/l)	Dermal LD50 (mg/kg)			
2-Methyl-2-(methylthio)-O-(methylcarbamoyl) propionaldehyde oxime	P070	X	X		Rat 1 (N)			T	Oral	
2-Methyllactonitrile	P069	X	X		Rat 17 (N)	Rat (N) 0.63/4hr		T	Oral	
Mercury fulminate	P065	X	X					T	Explosive	
1-Napthyl-2-thiourea	P072	X	X		Rat 6 (N)			T	Oral	
Nickel carbonyl	P073	X	X			Rat .35/30min (N)		T	Inhalation	
Nitroglycerine	P081	X	X		Human LDLo 5 (N)			T	Oral Explosive	
Oley alcohol condensed with 2 moles of ethylene oxide				X				T		FDA Food Additive
Osmium tetroxide	P087	X	X		Rat 14 (N)			T	Oral	
7-Oxabicyclo (2.2.1) heptane-2,3-di-carboxylic acid	P088	X	X		Rat 38 (N)			T	Oral	
N-Phenylthiourea	P093	X	X		Rat 3 (N)			T	Oral	

Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)					
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LD50 (mg/l)	Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped (4)
Vanadic acid, ammonium salt	P119	X	X		Rat 18 (N)			T	Oral	
Vanadium pentoxide	P120	X	X		Rat 10 (N)			T	Oral	
Zinc phosphide	P122	X	X		Rat 40 (S)			(S)	Oral	

Name	Hazardous Waste No.	Final Disposition .33e	Final Disposition VIII	Final Disposition dropped	Toxicity Data(1) Oral LD50 (mg/kg)	Toxicity Data(1) Inhalation LD50 (mg/1)	Toxicity Data(1) Dermal LD50 (mg/kg)	Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped (4)
Phorate	P094	X	X		Human LDLo 5 (N)			P	Oral	
Phosphorothioic acid, O,O-dimethyl ester, O-ester with p-hydroxy N,N-dimethylbenzenesulfonamide	P097	X	X		Rat 35 (N)			T	Oral	
Potassium silver cyanide	P099	X	X		Rat 21 (N)			T	Oral	
1,2-Propanediol				X				NIOSH		FDA Food Additive
2-Propyn-1-ol	P102	X	X		Rat 0.07 (N)			T	Oral Inhalation	
Selenourea	P103	X	X		Rat 50 (N)			T	Oral	
Strychnine	P108	X	X		Human LDLo 30 (N)			P	Oral	
Tetranitromethane	P112	X	X					(S)	Explosive	
Thallic oxide	P113	X	X		Rat 22 (N)			T	Oral	
Thiosemicarbazide	P116	X	X		Rat 9.16(N)			T	Oral	
Trichloromethanethiol	P118	X	X			Human LCLo 0.45 (S)		D	Inhalation	

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Name	Hazardous Waste No.	Final Disposition			Toxicity Data(1)			Commercial Product(2)	Reason on 261.33e(3)	Reason Dropped (4)
		.33e	VIII	dropped	Oral LD50 (mg/kg)	Inhalation LD50 (mg/l)	Dermal LD50 (mg/kg)			
Vanadic acid, ammonium salt	P119	X	X		Rat 18 (N)			T	Oral	
Vanadium pentoxide	P120	X	X		Rat 10 (N)			T	Oral	
Zinc phosphide	P122	X	X		Rat 40 (S)			(S)	Oral	

APPENDIX B

BASIS FOR INCLUSION ON §261.33(f)*

HAZARDOUS WASTE NUMBER	REASON FOR LISTING	SUBSTANCE
U001	1,4	Acetaldehyde (I)
U002	4	Acetone (I)
U003	1,4	Acetonitrile (I,T)
U004	1	Acetophenone
U005	3	2-Acetylaminoflourene
U006	1,4	Acetyl chloride (C,T,R)
U007	1	Acrylamide
U008	4	Acrylic acid (I)
U009	1,3	Acrylonitrile
U010	3	6-Amino-1,1a,2,8,8a,8b-hexahydro-8-(hydroxymethyl)-8-methoxy-5-methylcarbamate azirino(2',3':3,4) pyrrolo(1,2-a)indole-4,7-dione (ester)
U011	3	Amitrole
U012	4	Aniline (I)
U013	1	Asbestos
U014	3	Auramine
U015	3	Azaserine

(1) OSW Health Effects Profile
(2) NIPDWS Substance
(3) CAG Carcinogen
(4) Meets Criteria for (I), (C), or (R)
(5) RPAR Substance

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* Unless otherwise specified, compounds are listed for their toxic properties.

HAZARDOUS STE NUMBER	REASON FOR LISTING	SUBSTANCE
U016	3	Benz[c]acridine
U017	1	Benzal chloride
U018	1,3	Benz[a]anthracene
U019	1	Benzene
U020	4	Benzenesulfonyl chloride (C,R)
U021	1	Benzidine
U022	1	Benzo[a]pyrene
U023	4	Benzotrichloride (C,R,T)
U024	1	Bis(2-chloroethoxy)methane
U025	1,3	Bis(2-chloroethyl) ether
U026	3	N,N-Bis(2-chloroethyl)-2-naphthylamine
U027	1	Bis(2-chloroisopropyl) ether
U028	1	Bis(2-ethylhexyl) phthalate
U029	1	Bromomethane
U030	1	4-Bromophenyl phenyl ether
U031	2	n-Butyl alcohol (I)
U032	3	Calcium chromate
U033	4	Carbonyl fluoride (R)
U034	1	Chloral
U035	3	Chlorambucil
U036	1,3,5	Chlordane
U038	3,5	Chlorobenzilate

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(1) OSW Health Effects Profile
(2) NIPDWS Substance
(3) CAG Carcinogen
(4) Meets Criteria for (I), (C), or (R)
(5) RPAR Substance

HAZARDOUS WASTE NUMBER	REASON FOR LISTING	SUBSTANCE
U039	1	p-Chloro-m-cresol
U040	1	Chlorodibromomethane
U041	1	1-Chloro-2,3-epoxypropane
U042	1	2-Chloroethyl vinyl ether
U043	1,3	Chloroethene
U044	1,3,4	Chloroform (T)
U045	1,4	Chloromethane (I,T)
U046	3	Chloromethyl methyl ether
U047	1	2-Chloronaphthalene
U048	1	2-Chlorophenol
U050	1,3	Chrysene
U051	1,3	Creosote
U052	1	Cresols
U053	1,4	Crotonaldehyde (I)
U054	1	Cresylic acid
U055	4	Cumene (I)
U056	4	Cyclohexane (I)
U057	4	Cyclohexanone (I)
U058	3	Cyclophosphamide
U059	3	Daunomycin
U060	1	DDD
U061	1,3	DDT

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(1) OSW Health Effects Profile
(2) NIPDWS Substance
(3) CAG Carcinogen
(4) Meets Criteria for (I), (C), or (R)
(5) RPAR Substance

HAZARDOUS WASTE NUMBER	REASON FOR LISTING	SUBSTANCE
U062	3,5	Diallate
U063	3	Dibenz[a,h]anthracene
U064	3	Dibenzo[a,i]pyrene
U065	1	Dibromochloromethane
U066	3	1,2-Dibromo-3-chloropropane
U067	3	1,2-Dibromoethane
U068	1	Dibromomethane
U069	1	Di-n-butyl phthalate
U070	1	1,2-Dichlorobenzene
U071	1	1,3-Dichlorobenzene
U072	1	1,4-Dichlorobenzene
U073	1,3	3,3'-Dichlorobenzidine
U074	4	1,4-Dichloro-2-butene (I)
U075	1	Dichlorodifluoromethane
U076	1	1,1-Dichloroethane
U077	1,3	1,2-Dichloroethane
U078	1	1,1-Dichloroethylene
U079	1	trans-1,2-Dichloroethylene
U080	1	Dichloromethane
U081	1	2,4-Dichlorophenol
U082	1	2,6-Dichlorophenol
U083	1,4	1,2-Dichloropropane (I)
U084	1	1,3-Dichloropropene

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(1) OSW Health Effects Profile
(2) NIPDWS Substance
(3) CAG Carcinogen
(4) Meets Criteria for (I), (C), or (R)
(5) RPAR Substance

HAZARDOUS WASTE NUMBER	REASON FOR LISTING	SUBSTANCE
U085	3,4	1,2:3,4-Diepoxybutane (I,T)
U086	3	1,2-Diethylhydrazine
U087	1	O,O-Diethyl-S-methyl ester of phosphorodithioic acid
U088	1	Diethyl phthalate
U089	3	Diethylstilbestrol
U090	3	Dihydrosafrole
U091	3	3,3'-Dimethoxybenzidine
U092	4	Dimethylamine (I)
U093	3	p-Dimethylaminoazobenzene
U094	3	7,12-Dimethylbenz[a]anthracene
U095	3	3,3'-Dimethylbenzidine
U096	4	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	3	Dimethylcarbamoyl chloride
U098	3	1,1-Dimethylhydrazine
U099	3	1,2-Dimethylhydrazine
U100	1	Dimethylnitrosoamine
U101	1	2,4-Dimethylphenol
U102	1	Dimethyl phthalate
U103	3	Dimethyl sulfate
U105	1,3	2,4-Dinitrotoluene
U106	1	2,6-Dinitrotoluene
U107	1	Di-n-octyl phthalate

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(1) OSW Health Effects Profile
(2) NIPDWS Substance
(3) CAG Carcinogen
(4) Meets Criteria for
(I), (C), or (R)
(5) RPAR Substance

HAZARDOUS WASTE NUMBER	REASON FOR LISTING	SUBSTANCE
U108	3	1,4-Dioxane
U109	3	1,2-Diphenylhydrazine
U110	4	Di-n-propylamine (I)
U111	3	Di-n-propylnitrosamine
U112	4	Ethyl acetate (I)
U113	4	Ethyl acrylate (I)
U114	3	Ethylenebisdithiocarbamate
U115	3,4	Ethylene oxide (I,T)
U116	3	Ethylene thiourea
U117	4	Ethyl ether (I)
U118	1	Ethyl methacrylate
U119	3	Ethyl methanesulfonate
U120	1	Fluoranthene
U121	1	Fluorotrichloromethane
U122	1,3	Formaldehyde
U123	4	Formic acid (C,T)
U124	4	Furan (I)
U125	4	Furfural (I)
U126	3	Glycidylaldehyde
U127	1,3	Hexachlorobenzene
U128	1,3	Hexachlorobutadiene
U129	1,3	Hexachlorocyclohexane

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(5) RPAR Substance

HAZARDOUS STE NUMBER	REASON FOR LISTING	SUBSTANCE
U130	1	Hexachlorocyclopentadiene
U131	1,3	Hexachloroethane
U132	1	Hexachlorophene
U133	3,4	Hydrazine (R,T)
U134	4	Hydrofluoric acid (C,T)
U135	1	Hydrogen sulfide
U136	4	Hydroxydimethyl arsine oxide
U137	1,3	Indeno(1,2,3-cd)pyrene
U138	3	Iodomethane
U139	3	Iron Dextran
U140	4	Isobutyl alcohol
U141	3	Isosafrole
U142	3	Kepone
U143	3	Lasiocarpine
U144	1,2,5	Lead acetate
U145	1,2	Lead phosphate
U146	1,2	Lead subacetate
U147	1,2,4	Maleic anhydride
U148	4	Maleic hydrazide
U149	1	Malononitrile
U150	3	Melphalan
U151	1	Mercury
U152	4	Methacrylonitrile (I)

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(1) OSW Health Effects Profile
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(4) Meets Criteria for (I), (C), or (R)
(5) RPAR Substance

HAZARDOUS WASTE NUMBER	REASON FOR LISTING	SUBSTANCE
U153	4	Methanethiol (I)
U154	1,4	Methanol (I,T)
U155	3	Methapyrilene
U156	4	Methyl chlorocarbonate (I)
U157	3,4	3-Methylcholanthrene
U158	3	4,4'-Methylene-bis-(2-chloroaniline)
U159	1,4	Methyl ethyl ketone (I,T)
U160	4	Methyl ethyl ketone peroxide (R)
U161	1	Methyl isobutyl ketone
U162	1,4	Methyl methacrylate (R,T,I)
U163	3	N-Methyl-N'-nitro-N-nitrosoguanidine
U164	3	Methylthiouracil
U165	1	Naphthalene
U166	1	1,4-Naphthoquinone
U167	3	1-Naphthylamine
U168	3	2-Naphthylamine
U169	1,4	Nitrobenzene (I,T)
U170	1	4-Nitrophenol
U171	4	2-Nitropropane (I)
U172	3	N-Nitrosodi-n-butylamine
U173	3	N-Nitrosodiethanolamine
U174	1,3	N-Nitrosodiethylamine
U175	1,3	N-Nitrosodi-n-propylamine
U176	3	N-Nitroso-n-ethylurea

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(1) OSW Health Effects Profile
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(5) RPAR Substance

HAZARDOUS STE NUMBER	REASON FOR LISTING	SUBSTANCE
U177	3	N-Nitroso-n-methylurea
U178	3	N-Nitroso-n-methylurethane
U179	3	N-Nitrosopiperidine
U180	3	N-Nitrosopyrrolidine
U181	3	5-Nitro-o-toluidine
U182	1	Paraldehyde
U183	1	Pentachlorobenzene
U184	1	Pentachloroethane
U185	1,3,5	Pentachloronitrobenzene
U186	4	1,3-Pentadiene (I)
U187	3	Phenacetin
U188	1	Phenol
U189	4	Phosphorus sulfide (R)
U190	1	Phthalic anhydride
U191	1	2-Picoline
U192	3	Pronamide
U193	3	1,3-Propane sultone
U194	4	n-Propylamine (I)
U196	1	Pyridine
U197	1	Benzoquinones
U200	3	Reserpine
U201	1	Resorcinol
U202	3	Saccharin

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(5) RPAR Substance

HAZARDOUS STE NUMBER	REASON FOR LISTING	SUBSTANCE
U203	1,3	Safrole
U204	2	Selenious acid
U205	1,3,4	Selenium sulfide (R,T)
U206	3	Streptozotocin
U207	1,3	1,2,4,5-Tetrachlorobenzene
U208	1,3	1,1,1,2-Tetrachloroethane
U209	1	1,1,2,2-Tetrachloroethane
U210	1	Tetrachloroethene
U211	1	Tetrachloromethane
U212	1	2,3,4,6-Tetrachlorophenol
U213	4	Tetrahydrofuran (I)
U214	1,4	Thallium (I) acetate
U215	1,4	Thallium (I) carbonate
U216	1,4	Thallium (I) chloride
U217	1,4	Thallium (I) nitrate
U218	3	Thioacetamide
U219	3	Thiourea
U220	1	Toluene
U221	1	Toluenediamine
U222	3	o-Toluidine hydrochloride
U223	1	Tolylene diisocyanate
U224	1,3	Toxaphene
U225	1	Tribromomethane

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(1) OSW Health Effects Profile
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(4) Meets Criteria for (I), (C), or (R)
(5) RPAR Substance

HAZARDOUS 'STE NUMBER	REASON FOR LISTING	SUBSTANCE
U226	1	1,1,1-Trichloroethane
U227	1	1,1,2-Trichloroethane
U228	1,3	Trichloroethene
U229	1	Trichlorofluoromethane
U230	1	2,4,5-Trichlorophenol
U231	1,3	2,4,6-Trichlorophenol
U232	5	2,4,5-Trichlorophenoxyacetic acid
U233	2	2-(2,4,5-Trichlorophenoxy)propionic acid
U234	1,4	Trinitrobenzene (R,T)
U235	3	Tris(2,3-dibromopropyl) phosphate
U236	3	Trypan blue
U237	3	Uracil mustard
U238	3	Urethane (Ethyl carbamate)
U239	1,4	Xylene

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(1) OSW Health Effects Profile
(2) NIPDWS Substance
(3) CAG Carcinogen
(4) Meets Criteria for (I), (C), or (R)
(5) RPAR Substance

Response To Comments on Interim Final Regulations

On May 19, 1980, as part of its final and interim final regulations implementing Section 3001 of RCRA, the Agency promulgated as §261.33 the regulations discussed in the first part of this background document. This regulation consists of a list of 361 commercial chemical products or manufacturing chemical intermediates which are hazardous wastes if they are discarded or intended to be discarded (see 45 FR 33124-33127). Section 261.33 also lists as hazardous wastes off-specification variants and the residues and debris from the clean-up of spills of these 361 chemicals, if discarded or intended to be discarded (§261.33(b) and (d)). Finally, §261.33 lists as hazardous wastes the containers and inner liners of containers that have held 122 of these chemicals (those listed in paragraph (e)), if they are discarded or intended to be discarded, unless they have been triple rinsed with an appropriate solvent or have been decontaminated in an equivalent manner. (§261.33(c).) The regulation also covers materials not specifically listed by name, so long as they "have the generic name listed in paragraphs (e) or (f)...." (§261.33(a), (b), (c), and (d).)

The Agency received a large number of comments on this regulation. The comments for the most part challenged the Agency's decision to list particular substances as hazardous wastes. Some questions also were raised regarding the scope of the regulation, particularly with respect to trade products containing a listed chemical but not specifically listed themselves. Comments also were submitted concerning the difficulty of determining the chemical constituents of unlisted trade name products. Finally, many questions have been received regarding the interpretation of §261.33.

The Agency responded to these comments in the preamble to the final regulations (45 FR 78532, November 25, 1980). That preamble set forth the Agency's disposition of all listings of particular substances, and the basis for the Agency's decision. The Agency also clarified the scope of coverage of trade products, and provided guidance as to how to determine whether a given tradename product is regulated under §261.33. Certain interpretative questions raised regarding §261.33 also were addressed.

The Agency has little to add to these responses. We have expanded slightly our responses to the comments on listings of specific chemicals, and these comments are included in this background document. As stated, the preamble contains the remaining responses.

I. Finalization of Chemical Product Names in §261.33(e) and (f)

A. The changes made in response to comments on specific listings are described summarily below. More detailed explanations are contained in the revised Background Document.

EPA Hazardous Waste Number	Compound Name	Action Taken	Reason
P019 and U160	2-Butanone peroxide (Methyl ethyl ketone peroxide)	Deleted from §261.33(e). Remains in §261.33(f). Added (R) designation.	2-Butanone peroxide and methyl ethyl ketone peroxide, synonyms for the same compound, were mistakenly included in both the §261.33(e) and (f) lists. This compound does not meet the cirteria for listing as an acutely hazardous waste. However, the compound's oral (rat) LD50 of 484 mg/kg qualifies it for continued inclusion in §261.33(f). Moreover, 2-butanone peroxide presents a substantial hazard if improperly managed due to its severe reactivity. Being a strong oxidizer an explosion could occur if the materials such as would be found in trash for example.

P032	Cyanogen bromide	d from §261.33(e) to §261.33(f)	The LC50 value cited in sup of the May 19th promulgation was incorrect. According to new data, the compound does not meet the criteria for listing as an acutely toxic waste. However, cyanogen bromide's inhalation (rat) LC50 of 4.35 mg/l/hr--only slightly less toxic than the standard for an acutely hazardous waste--qualifies it for inclusion as a hazardous waste. It thus remains listed under §261.33(f) as U246.
P035	2,4-Dichlorophenoxyacetic acid [2,4-D]	Moved from §261.33(e) to §261.33(f) and listing clarified	Re-evaluation of this listing in light of data received during the comment period indicates that the compound does not meet the criteria for listing as an acute hazard. Since the toxicity of 2,4-D is well recognized (for example, it is a National Interim Primary Drinking Water Standard pollutant), the compound is listed as a hazardous waste under §261.33(f) as U240. The active pesticide ($C_6H_3(Cl_2)OCH_2COO$ moiety) is marketed commercially in a number of chemical forms. To clarify that the listing is meant to cover these various forms, the listing description has been clarified by explicitly including 2,4-D's salts and esters.
P052	Ethylcyanide	Deleted	Listing duplicated P101 listing.
P053	Ethylenediamine	Deleted	LDLo value cited in support of the May 19th promulgation was incorrect. New data indicates that the compound is unlikely to pose a substantial hazard to human health or the environment even if the waste is mismanaged, so the waste therefore has been deleted from §261.33.

P061	Hexachloropropene	Moved from §261.33(e) to §261.33(f)	The LC50 value cited in support of the May 19th promulgation was incorrect. According to new data, the compound does not meet the criteria for listing as an acutely toxic waste. However, hexachloropropene's inhalation (rat) LC50 of 2.4 mg/l/hr -- only slightly less toxic than the standard for an acutely hazardous waste -- qualifies it for inclusion as a hazardous waste. It thus remains listed under §261.33(f) as U243.
P079	Nitrogen peroxide	Deleted	Listing duplicated P078 listing.
P083	N-Nitrosodiphenylamine	Deleted	The LD50 value cited in support of the May 19th promulgation was incorrect. No information is presently available which shows that the waste poses a significant threat to human health or the environment even if it was mismanaged and it therefore has been deleted from §261.33.
P086	Oleyl alcohol condensed with 2 moles of ethylene oxide	Deleted	The LD50 value cited in support of the May 19th promulgation was incorrect. New data indicates that the compound is unlikely to pose a significant threat to human health or the environment even if the waste is mismanaged. This conclusion is supported by the decision of the Food & Drug Administration to permit the use of this compound as an indirect food additive.

P090	Pentachlorophenol	Moved from §261.33(e) to §261.33(f)	After reviewing in more detail the available studies, the Agency has concluded that pentachlorophenol does not meet the criteria for an acutely hazardous waste (see the response to comments section of the November 1980 Wood Preserving Waste Listing Background Document for more information). However, its toxicity is well recognized and the waste will remain listed under §261.33(f) as U242.
P100	1,2-Propanediol	Deleted	The LD50 value cited in support of the May 19th promulgation was incorrect. New data indicates that the compound is unlikely to pose a significant hazard to either human health or the environment even if the waste is improperly managed. This decision is further supported by the Food & Drug Administration's approval of this compound as a direct food additive.
P117	Thiuram	Moved from §261.33(e) to §261.33(f) and listing changed to clarify the specific waste being regulated	According to the NIOSH "Registry of Toxic Effects of Chemical Substances", thiuram is a synonym for bis(dimethylthiocarbamoyl) disulfide. Comments were received which indicated that other compounds were also known as "thiurams". We have accordingly changed the listing "thiuram" to clarify that the intended compound is "bis(dimethylthiocarbamoyl) disulfide". Secondly, the human (oral) LDLo data cited in support of the May 19th promulgation has been found to be incorrect. According to the new data, bis(dimethylthiocarbamoyl) disulfide has

			a rat (oral) LD50 of 560 mg/kg and can thus cause injury of sufficient severity to threaten life following ingestion of a single dose. In addition, ingestion of this compound before or after consuming an alcoholic beverage (e.g., beer) leads to a synergistic reaction which increases the risk to the exposed person. If the discarded product was thus mishandled, it is very possible that such exposures could result. Thus the compound has been listed as a hazardous waste in §261.33(f) as U244.
U040 and U065	Chlorodibromomethane and Dibromochloromethane	Deleted	After reevaluating the available environmental and toxicological information, the Agency has concluded that the information is not conclusive enough to justify retaining the listing. Pending receipt of additional data, the waste has been removed from inclusion under §261.33.
U044	Chloroform	Deleted (I) designation	Mistakenly included. Chloroform does not have a flash point below 60°C.
U100	Dimethylnitrosamine	Deleted	Acutely toxic and remains listed as P082.
U104	2,4-Dinitrophenol	Deleted	Acutely toxic and remains listed as P048.
U154	Methanol	Changed to (I) designation	After considering the comments received, the Agency has concluded that it has insufficient information to justify listing methanol for toxicity. However, since it has a flash point of 11°C, it will remain listed under §261.33(f) as an ignitable waste.

U161	Methyl isobutyl ketone	Changed to (I) designation	After considering the comments received, the Agency has concluded that it has insufficient information to justify listing methyl isobutyl ketone for toxicity. However, since it has a flash point of 22.8°C, it will remain listed under §261.33(f).
U197	Quinones	Changed to p-benzoquinone	As the data cited in support of the May 19th promulgation indicated, the Agency's available toxicological data referred to p-benzo-quinone only. The original listing of "Quinones" thus was over-inclusive. We are accordingly revising the listing description. Appendix A to the May 19th listing Background Document (Health and Environmental Effects Profiles) summarizes adverse health and environmental effects associated with p-benzoquinone.
U202	Saccharin	Added to listing "... and salts."	The May 19th promulgation was intended to include both the parent compound as well as its salts, since normal commercial use includes (and is known to include) both forms. In light of this common usage, we do not believe that any notice and comment issues are present. The arguments that saccharin is not carcinogenic were not deemed persuasive enough by the Agency to warrant deletion from §261.33 list. That saccharin poses a significant carcinogenic hazard is amply demonstrated by the warnings that are required by the Food & Drug Administration to appear on any food to which saccharin is added.
U229	Trichlorofluoromethane	Deleted	Listing duplicated U121 listing.

U238	Urethane	Listing description modified	The original listing of urethane has been changed to read "ethyl carbamate (urethan)" to indicate more clearly that the listing does not refer to either the polymers commonly known as "polyurethanes" or their precursors.
U239	Xylene	Changed to (I) designation	Xylene was mistakingly listed as toxic instead of as ignitable. While xylene does not appear to pose a sufficient toxicity hazard for listing as a toxic waste, as was indicated earlier in this Background Document, xylene is an ignitable waste due to its flash point of 27°C.

B. In [illegible]ion to the above changes made in response to [illegible]nts, the following changes, described summaril[illegible]low, have been made as a result of the Agency's review of the interim final regulations.

EPA Hazardous Waste Number	Compound Name	Action Taken	Reason
P006	Aluminum phosphide	Added (T) designation	As indicated earlier in this Background Document, in addition to posing a hazard due to its reactivity towards water, aluminum phosphide is acutely toxic with a human (oral) (oral) LD50 of 20 mg/kg(2). Thus the listing has been changed to add the toxic designation (T) which had been inadvertently omitted.
P030	Cyanide salt mixtures not otherwise specified	Modified listing description	The term cyanides in the May 19th promulgation was intended to cover inorganic cyanide salts which had not been singled out for specific listing and mixtures of cyanide salts. Since this intent appeared to have been misunderstood by several of the commenters, the listing has been changed to eliminate such misunderstandings.
P055	Ferric cyanide	Deleted	Listing duplicated P030 listing.
P065	Mercury fulminate	Added (R) designation	The (R) designation was omitted inadvertantly. While mercury fulminate is toxic it is also acutely hazardous because of mercury fulminate's explosive properties.
P080	Nitrogen tetroxide	Deleted	Listing duplicated P078 listing.

P091	Phenyl dichloroarsine	Deleted	Listing duplicated P036 listing.
P097	Phosphorothioic acid, O,O-dimethyl ester, O-ester with N,N-dimethyl benzene sulfonamide	Listing corrected	The Agency had mistakenly listed this compound. It does not exist. The correct compound is "Phosphorothioic acid, O,O-dimethyl O-[p-((dimethylamino)-sulfonyl)phenyl] ester."
P112	Tetranitromethane	Changed to (R) designation.	The (R) designation was inadvertantly omitted. While tetranitromethane is toxic (as was pointed out earlier, it is acutely hazardous because of tetranitromethane's explosive properties.
U001	Acetaldehyde	Changed to (I) designation	This compound does not pose a sufficient hazard for listing because of toxicity. However, acetaldehyde's flash point of -37.8°C classes it as a hazardous waste by reason of ignitability.
U006	Acetyl chloride	Added (R) designation	The reactivity designation was mistakenly omitted from the listing, although the May 19th promulgation cited reactivity as a reason for listing.
U012	Aniline	Added (T) designation	In addition to aniline's ignitable properties, it is also toxic with an oral (rat) LD50 of 440 mg/kg (3).
U019	Benzene	Added (I) designation	As well as being toxic, this compound is highly flammable (10-12°C). (3).
U033	Carbonyl fluoride	Added (R) designation	In addition to carbonyl flouride's toxic properties, as was indicated earlier in this Background Document, it also poses a hazard due to its reactivity.
U054	Cresylic acid	Deleted	Listing duplicated U052 listing, which now reads cresol and cresylic acid.

U055	Cumene	Changed to (I) designation	This compound does not pose a sufficient hazard for listing because of toxicity. However, cumene poses an ignitability hazard due to its flash point of 44°C.
U074	1,4-Dichloro-2-butene	Added (I) designation	A review of the literature indicated that as well as being toxic, this compound is highly flammable (flash point of 27°C).
U085	1,2:3,4-Diepoxybutane	Listing corrected	Clarification, prefix omitted by mistake.
U117	Ethyl ether	Changed to (I) designation	This compound does not pose a sufficient hazard for listing because of toxicity. However, ethyl ethers flash point of -45°C classified it as an ignitable waste.
U140	Isobutyl alcohol	Added (I) designation	The ignitability designation was inadvertently omitted as the F005 listing Background Document indicated, isobutyl alcohol has a flash point of 28°C, well within the range of an ignitable waste (<60°C).
U152	Methacrylonitrile	Added (I) designation	As well as being toxic, this compound is highly flammable (12°C).
U153	Methanethiol	Added (I)	As well as being toxic, this compound is highly flammable (-18°C).
U156	Methyl chlorocarbonate	Added (I) designation	This designation was mistakenly omitted although the data cited in support of the May 19th promulgation indicated that the waste presents a hazard due to ignitability. The waste in fact has a flash point of 12°C.
U162	Methyl methacrylate	Added (I) designation	This designation was mistakenly omitted from the regulation, although the data cited in support of the May 19th promulgation indicated that the compound is ignitable. The waste, in fact, possesses a flash point of 10°C.
U175	N-Nitrosodi-n-propylamine	Deleted	Listing duplicated U111 listing.

U194	n-Propylamine	Added (T) designation	The toxic designation was omitted mistakenly. Further discussion is contained in the next part of this discussion.
U223	Toluene diisocyanate	Added (R) designation	As well as being toxic, this compound is highly reactive. See discussion in 2. C. of this section.
U244	Toxaphene	Moved from §261.33(f) to §261.33(e)	Material has an oral (rat) LD50 of 40 mg/Kg; thus meeting the standards for an acutely hazardous waste. Its new hazardous waste number is P123.

C. Several comments were received which argued against the listing of a specific compound but were judged by the Agency to be nonpersuasive. These comments are summarized below along with the reason for our decision to retain the chemical in the §261.33 lists.

EPA Hazardous Waste Number	Compound Name	Reason
P056	Fluorine	This chemical was listed as intended. The hazardous material is flourine, the diatomic molecule F_2, not the polynuclear aromatic "fluorene" discussed in the comment. Since flourine has a reported inhalation (human) TCLo of .00035 mg/l/hr, which falls within the standards for an acutely hazardous waste, it will remain listed under §261.33(e).
P107	Strontium sulfide	While the oral (rat) LD50 data cited in support of the May 19th promulgation was incorrect, the correct oral (human) LDLo data which was cited by the commenter -- 50 mg/Kg (Letter from Chemical Products Corp., dated August 18, 1980) -- confirms the Agency's original classification of this waste as acutely hazardous.
U007	Acrylamide	The Agency admits that the Health and Environmental Effects profile for acrylamide was unavailable for comment when the regulations were promulgated. However, the Agency strongly believes that sufficient information on the toxicity/carcinogenicity of this compound was presented in the listing Background Document for waste K014 to support the continued inclusion of acrylamide under §261.33.
U030	4-Bromophenyl phenyl ether	The commenter claims that this compound is not in commercial use. Pending verification of the claim the compound will remain listed under §261.33.

U037	Chlorobenzene	As was discussed in the Health and Environmental Effects Profile published in support of the May 19th promulgation of the Part 261 regulations indicated, chlorobenzene is absorbed from the gastrointestinal tract and is in part metabolized to chlorinated phenols. Although its acute toxicity is not very high, many chronic effects have been noted. Continued administration at low doses inhibits red blood cell formation, induces eosinophilia, and chromosome changes in the rat. Decreased spermatogenesis and other gonadal effects were also noted in male dogs and in female rats exposed to low doses. Chlorobenzene has also been found to be mutagenic in certain short term bioassays.
U075	Dichlorodifluoromethane	Commenter did not present any data to argue against the continued listing of dichlorodifluoromethane and the waste thus will remain listed. It should be noted that the Agency's overriding concern with this compound, as with all chlorinated fluorocarbons, relates to the fact that chlorinated fluorocarbons may indirectly cause skin cancer by depletion of the stratopheric ozone. For further information, the reader is referred to the Listing Background Document "Spent Halogenated and Non-Halogenated Solvents and Still Bottoms/Sludges From The Recovery Of Those Solvents."
U080	Dichloromethane	The Agency disagrees with the comment that dichloromethane does not pose a hazard if mismanaged. Although the NCI sponsored bioassay studies have not been completed, EPA has found suggestive evidence of its carcinogenicity. Therefore, while the Agency has revised the Health and Environmental Effects Profile cited in this Background Document to indicate that dichloromethane is only a suspect carcinogen, it cannot ignore this preliminary finding particularly in light of the large quantity of this material in use and the likelihood of its being discarded. For further information the reader is referred to the Listing Background Document "Spent Halogenated and Non-Halogenated Solvents and the Still Bottoms/Sludges From the Recovery of these Solvents."

U102 and U107	Dimethyl phthalate and Di-n-octyl phthalate	Whi these compounds are not acutely toxic to man, t. have been found to be teratogenic in rats, causing fetal resorbtion, gross abnormalities, and decreased fetal weight. Dimethyl phthalate is mutagenic in microbial assay systems. In addition, a recent report (Water Quality Criteria Document: Phthalate Esters, NTIS PB No. 81-117780) indicated that neurotoxic effects have been observed in workers exposed to mixtures of phthalates.
U121	Fluorotrichloromethane	Fluorotrichloromethane has been listed because of the danger it poses to the earth's ozone layer and thus its removal from the list of toxic chemicals under §307 of the Clean Water Act is not germane to the reason it was listed as a hazardous waste.
U140	Isobutyl Alcohol	The Health and Environmental Effects Profile (Appendix A of the May 19th Listing Background Document) discusses and supports the listing of this waste as toxic. More specifically, oral administration in rats of relatively high concentrations of this substance resulted in biochemical and histologic liver changes. Liver carcinomas and sarcomas as well as myeloid leukemia have also been produced in this species. Additionally, this compound should also have been listed as ignitable in §261.33(f), since the May 19, 1980 listing of waste F005 clearly indicates that the compound is ignitable. The waste, in fact, possesses a flash point 28°C. Isobutyl alcohol also will be added to Appendix VIII of Part 261, from which it was omitted inadvertantly.
U184	Pentachloroethane	Contrary to claims of the commenter, a Health and Environmental Effects Profile for this compound was published (Appendix A of §§261.31 and 261.32 Listing Background Documents, pp. 435-453 According to this profile, release of pentachloroethane to the environment poses a potential hazard to aquatic ecosystems. For example, according to the recent Water Quality Criteria Document (U.S. EPA, Ambient Water Quality Criteria: Chlorinated Ethanes. EPA 440/5-80-029. October 1980.), the maximum concentration that can be present in surface waters without danger to the ecosystem is 38 - 87 ug/1. Pentachloroethane also is bioaccumulative, a further reason for its continued listing.

U188	Phenol	The Agency strongly disagrees with the comment that mismanagement of waste phenol does not pose a hazard to human health. While the carcinogenicity of phenol has not been firmly established, both liver and kidney damage to humans will result from chronic exposure to phenol with death a potential consequence. In addition, the acute toxicity of phenol results in central nervous system depression with symptoms severe enough to earn phenol a toxicity rating of 'High' in Sax (1). This standard reference indicates that "death or permanent injury may occur due to exposure at normal use ...". Therefore, the Agency will continue to include phenol under §261.33(f).
U194	n-Propylamine	While the commenter believes that compounds, such as this one, having an oral (rat) LD50 of 570 mg/kg are not toxic, the Agency disagrees. Other standard sources support the Agency's viewpoint. For example, "Clinical Toxicology of Commercial Products", considers compounds which have an oral LD50(as determined using rats) in the range of 500 mg/kg to 5000 mg/kg to be toxic to moderately toxic; however, it should be noted that this compound is at the lower end of the range and would tend to be considered toxic rather than moderately toxic.
U207	Tetrachlorobenzene	The Health and Environmental Effects Profile cited in the May 19th Background Document discusses and supports the listing of all waste commercial chlorinated benzenes. Among the specific toxic effects of tetrachlorobenzene are its aquatic toxicity (14.5 ug/l) and bioconcentration factor (1800X). Since the commenter did not present any specific evidence or reasons for the Agency not to list tetrachlorobenzene as a hazardous waste, It will remain listed under §261.33(f).
U212	2,3,4,6-Tetrachlorophenol	As stated in the Health Effects Profile for this compound, 2,3,4,6-Tetrachlorophenol is fetotoxic in rats, and inhibits both carbohydrate metabolism and the liver oxidase system. It also is bioaccumulative (bioaccumulation factor 1100). EPA has established 1 ug/l as the ambient water quality criterion based on organoleptic effects; 440 ug/l was established for the protection of aquatic life.

U220	Toluene	While toluene has a relatively low acute toxicity (oral [rat] LD50 of 5000 mg/Kg), as described in the cited Health and Environmental Effects Profile, low level chronic exposure to toluene has caused chromosome damage in humans and has led to the development of neuro-muscular disorders. Toluene has also been reported to cause reproductive problems to female workers during occupational exposure.
U223	Toluene diisocyanate	The Agency believes that toluene diisocyanate(TDI) should continue to be listed as a hazardous waste when discarded. TDI exposure produces respiratory sensitization, and decreased lung function. Exposure to high concentrations can result in pulmonary edema and death. Additionally, the reaction of free isocyanate groups with water can occur very rapidly, is exothermic, and can result in a possibly explosive release of toxic and potentially carcinogenic aromatic chemicals. Damage incidents of this type actually have occurred in waste management practice (see listing Background Document on Toluene Diisocyanate Production).
U226	1,1,1-Trichloroethane	No data was presented by the commenter to justify the contention that waste 1,1,1-trichloroethane does not pose a health hazard and should not be listed. As the bioassays described in the May 19th Appendix A Health and Environmental Effects Profile indicate increased tumor production was noted in animals treated with 1,1,1-trichloroethane. In addition, in vitro transformation of rat embryo cells and subsequent firbosarcoma production by these cells when injected in vivo, also indicates that 1,1,1-trichloroethane has carcinogenic potential. It should also be noted that the Agency recently determined that 1,1,1-Trichloroethane should continue to be listed as a toxic pollutant under §307(a) of the Clean Water Act.
U232 and U233	2,4,5-Trichlorophenoxyacetic acid and 2,4,5-Trichlorophenoxypropionic acid	One commenter questioned the presence of these constituents on the §261.33 list when the waste constituents are among the parameters measured by the characteristic of Extraction Procedure Toxicity (EP). We believe the concern is largely academic since discarded commercial chemical products consisting of these pesticides will undoubtedly contain concentrations many orders of magnitude above the EP levels.

D. gency received several comments indicating tha istake had been made in coverting from one set nits to a. er during the computation of inhalation toxicit, ues. We acknowledge that for a number of the . ounds listed for acute inhalation toxicity, the conversions were erroneous so that the values cited in support of the May 19th promulgation were incorrect. After recalculating the toxicity values, it was found that the following compounds still meet the criteria for listing as an acutely hazardous waste [inhalation (rat) LC50 $\leq$2 mg/1/hr or inhalation (human) LCLo $\leq$2 mg/1]. The raw data obtained from the literature, the value cited in support of the May 19th promulgation and the recalculated correct values are presented below. The formulas used in converting inhalation toxicity values are:

$$\text{ppm} = \text{mg/m}^3 \times (22.4/\text{MW}) \qquad \text{MW} = \text{Molecular weight}$$

$$\text{mg/1} = (\text{mg/m}^3)/1000$$

$$\text{mg/1} = (\text{MW})(\text{ppm})/(22.4)(1000)$$

$$(\text{mg/1/minute})/60 = \text{mg/1/hour}$$

$$(\text{mg/1/hour[s]})\text{x}(\text{hour[s]} = \text{mg/1/hour}$$

EPA Hazardous Waste Number	Compound Name	Molecular Weight	Cited Value (mg/1/hr)	Correct Value (mg/1/hr)	Published Value [Source of Data]
P005	Allyl alcohol	58	6.8	0.06	TCLo(hum) 25ppm [N]
P016	Bis(chloromethyl) ether	115	0.49	0.25	LC50(rat) 7ppm/7hr [S]
P017	Bromoacetone	137	0.95	0.53	TCLo(hum) 3.2mg/1/10mn[D]
P028 */	alpha-Chlorotoluene	127	0.003	1.70	LC50(rat) 150ppm/2hr [S]
P031	Cyanogen	52	0.16	0.81	LC50(rat) 350ppm/hr [S]

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*/The commenter, in urging deletion of alpha-chlorotoluene, referred to the Agency's statement in 45 Fed. Reg. 47833 (July 16, 1980) that chlorotoluene did not warrant inclusion in Appendix VIII to Part 261. Chlorotoluene and alpha-chlorotoluene are different compounds, of course. Alpha-chlorotoluene, also known as benzyl chloride, not only is acutely toxic, but has shown evidence of carcinogenicity (see Listing Background Document on Benzyl Chloride production).

P033	Cyanogen chloride	61	0.59	0.01	TCLo(hum) 10mg/m^3 [S]
P056	Fluorine	38	1.85	0.03	LC50(rat) 185ppm/hr [S]
P064	Isocyanic acid, methyl ester	41	0.20	0.004	TCLo(hum) 2ppm [N]
P066	Methomyl	162	0.77	0.56	LC50(rat) 77ppm. [N]
P068	Methyl hydrazine	46	2.96	0.61	LC50(rat) 74ppm/4hr [S]
P073	Nickel carbonyl	171	0.73	0.12	LC50(rat) 240mg/m^3/30min [S]
P096	Phosphine	34	0.44	0.07	LC50(rat) 11ppm/4hr [S]
P110	Tetraethyl lead	324	1.58	0.09	LC50(rat) 6ppm [S]
P118	Trichloromethanethiol		(1)	0.45	

[1] Listed in oral exposure column of Background Document instead of inhalation exposure column.

[N] = NIOSH Registry, [S] = Sax, [D] = DOT

References

1. Sax, N. Irving. Dangerous Properties of Industrial Materials. 5th ed. Van Nostrand Reinhold Co., New York, NY, 1975.

2. National Institute for Occupational Safety and Health. Registry of Toxic Effects of Chemical Substances. U.S. Department of Health Education and Welfare Publication No. (NIOSH) 78-104-A. U.S. Government Printing Office (GOP) Stock No. 017-033-00271, Washington, D.C., 1977.

3. Windholz, Martha, Ed. The Merck Index. 9th ed. Merck and Co., Rahway, New Jersey, 1976.

4. Gosselin, Robert E., Harold C. Hodge, Roger F. Smith and Marion N. Gleason. Clinical Toxicology of Commercial Products: Acute Poisoning. 4th ed. The Williams & Wilkins Co., Baltimore, MD, 1966.

5. The Farm Chemicals Handbook, Meister Publishing Co., Willoughby, OH. 1979.

Final Regulations

§261.33 Discarded Commercial Chemical Products, Off-Specification Species, Containers, and Spill Residues Thereof

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded:

(a) Any commercial chemical product, or manufacturing chemical intermediate having the generic name listed in paragraphs (e) or (f) of this section.

(b) Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraphs (e) or (f) of this section.

(c) Any container or inner liner removed from a container that has been used to hold any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) of this Section, unless:

(1) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

(2) The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

(3) In the case of a container, the inner liner that prevented contact of the commercial chemical product or

manufacturing chemical intermediate with the container, has been removed.

(d) Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraphs (e) or (f) of this Section.

[Comment: The phrase "commercial chemical product or manufacturing chemical intermediate having the generic name listed in..." refers to a chemical substance which is manufactured or formulated for commercial or manufacturing use. It does not refer to a material, such as a manufacturing process waste, that contains any of the substances listed in paragraphs (e) or (f). Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in paragraphs (e) or (f), such waste will be listed in either §§261.31 or 261.32 or will be identified as a hazardous waste by the characteristics set forth in Subpart C of this Part.]

(e) The commercial chemical products or manufacturing chemical intermediates, referred to in paragraphs (a) through (d) of this section, are identified as acute hazardous wastes (H) and are subject to the small quantity exclusion defined in §261.5(e). [Comment: For the convenience of the regulated community the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), and R (Reactivity). Absence of a letter indicates that the compound only is listed for acute toxicity.] These wastes and their corresponding EPA Hazardous Waste Numbers are:

Hazardous Waste No.	Substance
P023	Acetaldehyde, chloro-
P002	Acetamide, N-(aminothioxomethyl)-
P057	Acetamide, 2-fluoro-
P058	Acetic acid, fluoro-, sodium salt
P066	Acetimidic acid, N-[(methylcarbamoyl)oxy]thio-, methyl ester
P001	3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts
P002	1-Acetyl-2-thiourea
P003	Acrolein
P070	Aldicarb
P004	Aldrin
P005	Allyl alcohol
P006	Aluminum phosphide
P007	5-(Aminomethyl)-3-isoxazolol
P008	4-Aminopyridine
P009	Ammonium picrate (R)
P119	Ammonium vanadate
P010	Arsenic acid

Hazardous Waste No.	Substance
P012	Arsenic(III) oxide
P011	Arsenic(V) oxide
P011	Arsenic pentoxide
P012	Arsenic trioxide
P038	Arsine, diethyl-
P054	Aziridine
P013	Barium cyanide
P024	Benzenamine, 4-chloro-
P077	Benzenamine, 4-nitro-
P028	Benzene, (chloromethyl)-
P042	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-
P014	Benzenethiol
P028	Benzyl chloride
P015	Beryllium dust
P016	Bis(chloromethyl) ether
P017	Bromoacetone
P018	Brucine
P021	Calcium cyanide
P123	Camphene, octachloro-
P103	Carbamimidoselenoic acid
P022	Carbon bisulfide
P022	Carbon disulfide
P095	Carbonyl chloride
P033	Chlorine cyanide
P023	Chloroacetaldehyde
P024	p-Chloroaniline

Hazardous Waste No.	Substance
P026	1-(o-Chlorophenyl)thiourea
P027	3-Chloropropionitrile
P029	Copper cyanides
P030	Cyanides (soluble cyanide salts), not elsewhere specified
P031	Cyanogen
P033	Cyanogen chloride
P036	Dichlorophenylarsine
P037	Dieldrin
P038	Diethylarsine
P039	0,0-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate
P041	Diethyl-p-nitrophenyl phosphate
P040	0,0-Diethyl 0-pyrazinyl phosphorothioate
P043	Diisopropyl fluorophosphate
P044	Dimethoate
P045	3,3-Dimethyl-1-(methylthio)-2-butanone, 0-[(methylamino)carbonyl] oxime
P071	0,0-Dimethyl 0-p-nitrophenyl phosphorothioate
P082	Dimethylnitrosamine
P046	alpha,alpha-Dimethylphenethylamine
P047	4,6-Dinitro-o-cresol and salts
P034	4,6-Dinitro-o-cyclohexylphenol
P048	2,4-Dinitrophenol
P020	Dinoseb
P085	Diphosphoramide, octamethyl-
P039	Disulfoton
P049	2,4-Dithiobiuret
P109	Dithiopyrophosphoric acid, tetraethyl ester

Hazardous Waste No.	Substance
P050	Endosulfan
P088	Endothall
P051	Endrin
P042	Epinephrine
P046	Ethanamine, 1,1-dimethyl-2-phenyl-
P084	Ethenamine, N-methyl-N-nitroso-
P101	Ethyl cyanide
P054	Ethylenimine
P097	Famphur
P056	Fluorine
P057	Fluoroacetamide
P058	Fluoroacetic acid, sodium salt
P065	Fulminic acid, mercury(II) salt (R,T)
P059	Heptachlor
P051	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,endo-1,4:5,8-dimethanonaphthalene
P037	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,exo-1,4:5,8-dimethanonaphthalene
P060	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, endo-dimethanonaphthalene
P004	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, exo-dimethanonaphthalene
P060	Hexachlorohexahydro-exo,exo-dimethanonaphthalene
P062	Hexaethyl tetraphosphate
P116	Hydrazinecarbothioamide
P068	Hydrazine, methyl-
P063	Hydrocyanic acid
P063	Hydrogen cyanide
P096	Hydrogen phosphide

Hazardous Waste No.	Substance
P064	Isocyanic acid, methyl ester
P007	3(2H)-Isoxazolone, 5-(aminomethyl)-
P092	Mercury, (acetato-O)phenyl-
P065	Mercury fulminate (R,T)
P016	Methane, oxybis(chloro-
P112	Methane, tetranitro- (R)
P118	Methanethiol, trichloro-
P059	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
P066	Methomyl
P067	2-Methylaziridine
P068	Methyl hydrazine
P064	Methyl isocyanate
P069	2-Methyllactonitrile
P071	Methyl parathion
P072	alpha-Naphthylthiourea
P073	Nickel carbonyl
P074	Nickel cyanide
P074	Nickel(II) cyanide
P073	Nickel tetracarbonyl
P075	Nicotine and salts
P076	Nitric oxide
P077	p-Nitroaniline
P078	Nitrogen dioxide
P076	Nitrogen(II) oxide
P078	Nitrogen(IV) oxide
P081	Nitroglycerine (R)

Hazardous Waste No.	Substance
P082	N-Nitrosodimethylamine
P084	N-Nitrosomethylvinylamine
P050	5-Norbornene-2,3-dimethanol, 1,4,5,6,7,7-hexachloro, cyclic sulfite
P085	Octamethylpyrophosphoramide
P087	Osmium oxide
P087	Osmium tetroxide
P088	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P089	Parathion
P034	Phenol, 2-cyclohexyl-4,6-dinitro-
P048	Phenol, 2,4-dinitro-
P047	Phenol, 2,4-dinitro-6-methyl-
P020	Phenol, 2,4-dinitro-6-(1-methylpropyl)-
P009	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P036	Phenyl dichloroarsine
P092	Phenylmercuric acetate
P093	N-Phenylthiourea
P094	Phorate
P095	Phosgene
P096	Phosphine
P041	Phosphoric acid, diethyl p-nitrophenyl ester
P044	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
P043	Phosphorofluoric acid, bis(1-methylethyl) ester
P094	Phosphorothioic acid, O,O-diethyl S-(ethylthio)methyl ester
P089	Phosphorothioic acid, O,O-diethyl O-(p-nitrophenyl) ester
P040	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
P097	Phosphorothioic acid, O,O-dimethyl O-[p-((dimethylamino)-sulfonyl)phenyl] ester

P110	Plumbane, tetraethyl-
P098	Potassium cyanide
P099	Potassium silver cyanide
P070	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime
P101	Propanenitrile
P027	Propanenitrile, 3-chloro-
P069	Propanenitrile, 2-hydroxy-2-methyl-
P081	1,2,3-Propanetriol, trinitrate- (R)
P017	2-Propanone, 1-bromo-
P102	Propargyl alcohol
P003	2-Propenal
P005	2-Propen-1-ol
P067	1,2-Propylenimine
P102	2-Propyn-1-ol
P008	4-Pyridinamine
P075	Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts
P111	Pyrophosphoric acid, tetraethyl ester
P103	Selenourea
P104	Silver cyanide
P105	Sodium azide
P106	Sodium cyanide
P107	Strontium sulfide
P108	Strychnidin-10-one, and salts
P018	Strychnidin-10-one, 2,3-dimethoxy-
P108	Strychnine and salts
P115	Sulfuric acid, thallium(I) salt
P109	Tetraethyldithiopyrophosphate

Hazardous Waste No.	Substance
P110	Tetraethyl lead
P111	Tetraethylpyrophosphate
P112	Tetranitromethane (R)
P062	Tetraphosphoric acid, hexaethyl ester
P113	Thallic oxide
P113	Thallium(III) oxide
P114	Thallium(I) selenite
P115	Thallium(I) sulfate
P045	Thiofanox
P049	Thioimidodicarbonic diamide
P014	Thiophenol
P116	Thiosemicarbazide
P026	Thiourea, (2-chlorophenyl)-
P072	Thiourea, 1-naphthalenyl-
P093	Thiourea, phenyl-
P123	Toxaphene
P118	Trichloromethanethiol
P119	Vanadic acid, ammonium salt
P120	Vanadium pentoxide
P120	Vanadium(V) oxide
P001	Warfarin
P121	Zinc cyanide
P122	Zinc phosphide (R,T)

(f) The commercial chemical products or manufacturing chemical intermediates, referred to in paragraphs (a), (b), and (d) of this section, are identified as toxic wastes (T) unless otherwise designated and are subject to the small quantity exclusion defined in §261.5(a) and (f). [Comment: For the convenience of the regulated community, the primary hazardous properties of these materials have been indicated by the ltters T (Toxicity), R (Reactivity), I (Ignitability) and C (Corrosivity). Absence of a letter indicates that the compound is only listed for toxicity.] These wastes and their corresponding EPA Hazardous Waste Numbers are:

Hazardous Waste No.	Substance
U001	Acetaldehyde (I)
U034	Acetaldehyde, trichloro-
U187	Acetamide, N-(4-ethoxyphenyl)-
U005	Acetamide, N-9H-fluoren-2-yl-
U112	Acetic acid, ethyl ester (I)
U144	Acetic acid, lead salt
U214	Acetic acid, thallium(I) salt
U002	Acetone (I)
U003	Acetonitrile (I,T)
U004	Acetophenone
U005	2-Acetylaminofluorene
U006	Acetyl chloride (C,R,T)
U007	Acrylamide
U008	Acrylic acid (I)
U009	Acrylonitrile

Hazardous Waste No.	Substance
U150	Alanine, 3-[p-bis(2-chloroethyl)amino]phenyl-, L-
U011	Amitrole
U012	Aniline (I,T)
U014	Auramine
U015	Azaserine
U010	Azirino(2',3':3,4)pyrrolo(1,2-a)indole-4,7-dione, 6-amino-8-[((aminocarbonyl)oxy)methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-,
U157	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	Benz[c]acridine
U016	3,4-Benzacridine
U017	Benzal chloride
U018	Benz[a]anthracene
U018	1,2-Benzanthracene
U094	1,2-Benzanthracene, 7,12-dimethyl-
U012	Benzenamine (I,T)
U014	Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl-
U049	Benzenamine , 4-chloro-2-methyl-
U093	Benzenamine, N,N'-dimethyl-4-phenylazo-
U158	Benzenamine, 4,4'-methylenebis(2-chloro-
U222	Benzenamine, 2-methyl-, hydrochloride
U181	Benzenamine, 2-methyl-5-nitro-
U019	Benzene (I,T)
U038	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy, ethyl ester

Hazardous Waste No.	Substance
U030	Benzene, 1-bromo-4-phenoxy-
U037	Benzene, chloro-
U190	1,2-Benzenedicarboxylic acid anhydride
U028	1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester
U069	1,2-Benzenedicarboxylic acid, dibutyl ester
U088	1,2-Benzenedicarboxylic acid, diethyl ester
U102	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	1,2-Benzenedicarboxylic acid, di-n-octyl ester
U070	Benzene, 1,2-dichloro-
U071	Benzene, 1,3-dichloro-
U072	Benzene, 1,4-dichloro-
U017	Benzene, (dichloromethyl)-
U223	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	Benzene, dimethyl- (I,T)
U201	1,3-Benzenediol
U127	Benzene, hexachloro-
U056	Benzene, hexahydro- (I)
U188	Benzene, hydroxy-
U220	Benzene, methyl-
U105	Benzene, 1-methyl-2,4-dinitro-
U106	Benzene, 1-methyl-2,6-dinitro-
U203	Benzene, 1,2-methylenedioxy-4-allyl-
U141	Benzene, 1,2-methylenedioxy-4-propenyl-
U090	Benzene, 1,2-methylenedioxy-4-propyl-

Hazardous Waste No.	Substance
U055	Benzene, (1-methylethyl)- (I)
U169	Benzene, nitro- (I,T)
U183	Benzene, pentachloro-
U185	Benzene, pentachloro-nitro-
U020	Benzenesulfonic acid chloride (C,R)
U020	Benzenesulfonyl chloride (C,R)
U207	Benzene, 1,2,4,5-tetrachloro-
U023	Benzene, (trichloromethyl)- (C,R,T)
U234	Benzene, 1,3,5-trinitro- (R,T)
U021	Benzidine
U202	1,2-Benzisothiazolin-3-one, 1,1-dioxide
U120	Benzo[j,k]fluorene
U022	Benzo[a]pyrene
U022	3,4-Benzopyrene
U197	p-Benzoquinone
U023	Benzotrichloride (C,R,T)
U050	1,2-Benzphenanthrene
U085	2,2'-Bioxirane (I,T)
U021	(1,1'-Biphenyl)-4,4'-diamine
U073	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dichloro-
U091	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethoxy-
U095	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl-
U024	Bis(2-chloroethoxy) methane
U027	Bis(2-chloroisopropyl) ether
U244	Bis(dimethylthiocarbamoyl) disulfide

Hazardous Waste No.	Substance
U028	Bis(2-ethylhexyl) phthalate
U246	Bromine cyanide
U225	Bromoform
U030	4-Bromophenyl phenyl ether
U128	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	1-Butanamine, N-butyl-N-nitroso-
U035	Butanoic acid, 4-[Bis(2-chloroethyl)amino]benzene-
U031	1-Butanol (I)
U159	2-Butanone (I,T)
U160	2-Butanone peroxide (R,T)
U053	2-Butenal
U074	2-Butene, 1,4-dichloro- (I,T)
U031	n-Butyl alcohol (I)
U136	Cacodylic acid
U032	Calcium chromate
U238	Carbamic acid, ethyl ester
U178	Carbamic acid, methylnitroso-, ethyl ester
U176	Carbamide, N-ethyl-N-nitroso-
U177	Carbamide, N-methyl-N-nitroso-
U219	Carbamide, thio-
U097	Carbamoyl chloride, dimethyl-
U215	Carbonic acid, dithallium(I) salt
U156	Carbonochloridic acid, methyl ester (I,T)
U033	Carbon oxyfluoride (R,T)

Hazardous Waste No.	Substance
U211	Carbon tetrachloride
U033	Carbonyl fluoride (R,T)
U034	Chloral
U035	Chlorambucil
U036	Chlordane, technical
U026	Chlornaphazine
U037	Chlorobenzene
U245	1-(p-Chlorobenzoyl)-5-methoxy-2-methylindole-3-acetic acid
U039	4-Chloro-m-cresol
U041	1-Chloro-2,3-epoxypropane
U042	2-Chloroethyl vinyl ether
U044	Chloroform
U046	Chloromethyl methyl ether
U047	beta-Chloronaphthalene
U048	o-Chlorophenol
U049	4-Chloro-o-toluidine, hydrochloride
U032	Chromic acid, calcium salt
U050	Chrysene
U051	Creosote
U052	Cresols
U052	Cresylic acid
U053	Crotonaldehyde
U055	Cumene (I)
U246	Cyanogen bromide

Hazardous Waste No.	Substance
U197	1,4-Cyclohexadienedione
U056	Cyclohexane (I)
U057	Cyclohexanone (I)
U130	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
U058	Cyclophosphamide
U240	2,4-D, salts and esters
U059	Daunomycin
U060	DDD
U061	DDT
U142	Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one
U062	Diallate
U133	Diamine (R,T)
U221	Diaminotoluene
U063	Dibenz[a,h]anthracene
U063	1,2:5,6-Dibenzanthracene
U064	1,2:7,8-Dibenzopyrene
U064	Dibenz[a,i]pyrene
U066	1,2-Dibromo-3-chloropropane
U069	Dibutyl phthalate
U062	S-(2,3-Dichloroallyl) diisopropylthiocarbamate
U070	o-Dichlorobenzene
U071	m-Dichlorobenzene
U072	p-Dichlorobenzene
U073	3,3'-Dichlorobenzidine

Hazardous Waste No.	Substance
U074	1,4-Dichloro-2-butene (I,T)
U075	Dichlorodifluoromethane
U192	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide
U060	Dichloro diphenyl dichloroethane
U061	Dichloro diphenyl trichloroethane
U078	1,1-Dichloroethylene
U079	1,2-Dichloroethylene
U025	Dichloroethyl ether
U081	2,4-Dichlorophenol
U082	2,6-Dichlorophenol
U240	2,4-Dichlorophenoxyacetic acid, salts and esters
U083	1,2-Dichloropropane
U084	1,3-Dichloropropene
U085	1,2:3,4-Diepoxybutane (I,T)
U108	1,4-Diethylene dioxide
U086	N,N-Diethylhydrazine
U087	O,O-Diethyl-S-methyl-dithiophosphate
U088	Diethyl phthalate
U089	Diethylstilbestrol
U148	1,2-Dihydro-3,6-pyradizinedione
U090	Dihydrosafrole
U091	3,3'-Dimethoxybenzidine
U092	Dimethylamine (I)
U093	Dimethylaminoazobenzene
U094	7,12-Dimethylbenz[a]anthracene

Hazardous Waste No.	Substance
U095	3,3'-Dimethylbenzidine
U096	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	Dimethylcarbamoyl chloride
U098	1,1-Dimethylhydrazine
U099	1,2-Dimethylhydrazine
U101	2,4-Dimethylphenol
U102	Dimethyl phthalate
U103	Dimethyl sulfate
U105	2,4-Dinitrotoluene
U106	2,6-Dinitrotoluene
U107	Di-n-octyl phthalate
U108	1,4-Dioxane
U109	1,2-Diphenylhydrazine
U110	Dipropylamine (I)
U111	Di-N-propylnitrosamine
U001	Ethanal (I)
U174	Ethanamine, N-ethyl-N-nitroso-
U067	Ethane, 1,2-dibromo-
U076	Ethane, 1,1-dichloro-
U077	Ethane, 1,2-dichloro-
U114	1,2-Ethanediylbiscarbamodithioic acid
U131	Ethane, 1,1,1,2,2,2-hexachloro-
U024	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-
U003	Ethanenitrile (I,T)

Hazardous Waste No.	Substance
U117	Ethane, 1,1'-oxybis- (I)
U025	Ethane, 1,1'-oxybis[2-chloro-
U184	Ethane, pentachloro-
U208	Ethane, 1,1,1,2-tetrachloro-
U209	Ethane, 1,1,2,2-tetrachloro-
U218	Ethanethioamide
U227	Ethane, 1,1,2-trichloro-
U043	Ethene, chloro-
U042	Ethene, 2-chloroethoxy-
U078	Ethene, 1,1-dichloro-
U079	Ethene, trans-1,2-dichloro-
U210	Ethene, 1,1,2,2-tetrachloro-
U173	Ethanol, 2,2'-(nitrosoimino)bis-
U004	Ethanone, 1-phenyl-
U006	Ethanoyl chloride (C,R,T)
U112	Ethyl acetate (I)
U113	Ethyl acrylate (I)
U238	Ethyl carbamate (urethan)
U038	Ethyl 4,4'-dichlorobenzilate
U114	Ethylenebis(dithiocarbamic acid)
U067	Ethylene dibromide
U077	Ethylene dichloride
U115	Ethylene oxide (I,T)
U116	Ethylene thiourea

Hazardous Waste No.	Substance
U117	Ethyl ether (I)
U076	Ethylidene dichloride
U118	Ethylmethacrylate
U119	Ethyl methanesulfonate
U139	Ferric dextran
U120	Fluoranthene
U122	Formaldehyde
U123	Formic acid (C,T)
U124	Furan (I)
U125	2-Furancarboxaldehyde (I)
U147	2,5-Furandione
U213	Furan, tetrahydro- (I)
U125	Furfural (I)
U124	Furfuran (I)
U206	D-Glucopyranose, 2-deoxy-2(3-methyl-3-nitrosoureido)-
U126	Glycidylaldehyde
U163	Guanidine, N-nitroso-N-methyl-N'nitro-
U127	Hexachlorobenzene
U128	Hexachlorobutadiene
U129	Hexachlorocyclohexane (gamma isomer)
U130	Hexachlorocyclopentadiene
U131	Hexachloroethane
U132	Hexachlorophene
U243	Hexachloropropene

Hazardous Waste No.	Substance
U133	Hydrazine (R,T)
U086	Hydrazine, 1,2-diethyl-
U098	Hydrazine, 1,1-dimethyl-
U099	Hydrazine, 1,2-dimethyl-
U109	Hydrazine, 1,2-diphenyl-
U134	Hydrofluoric acid (C,T)
U134	Hydrogen fluoride (C,T)
U135	Hydrogen sulfide
U096	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U136	Hydroxydimethylarsine oxide
U116	2-Imidazolidinethione
U137	Indeno[1,2,3-cd]pyrene
~~U245~~	~~Indomethacin~~
U139	Iron dextran
U140	Isobutyl alcohol (I,T)
U141	Isosafrole
U142	Kepone
U143	Lasiocarpine
U144	Lead acetate
U145	Lead phosphate
U146	Lead subacetate
U129	Lindane
U147	Maleic anhydride
U148	Maleic hydrazide
U149	Malononitrile
U150	Melphalan

Hazardous Waste No.	Substance
U151	Mercury
U152	Methacrylonitrile (I,T)
U092	Methanamine, N-methyl- (I)
U029	Methane, bromo-
U045	Methane, chloro- (I,T)
U046	Methane, chloromethoxy-
U068	Methane, dibromo-
U080	Methane, dichloro-
U075	Methane, dichlorodifluoro-
U138	Methane, iodo-
U119	Methanesulfonic acid, ethyl ester
U211	Methane, tetrachloro-
U121	Methane, trichlorofluoro-
U153	Methanethiol (I,T)
U225	Methane, tribromo-
U044	Methane, trichloro-
U121	Methane, trichlorofluoro-
U123	Methanoic acid (C,T)
U036	4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-
U154	Methanol (I)
U155	Methapyrilene
U154	Methyl alcohol (I)
U029	Methyl bromide
U186	1-Methylbutadiene (I)
U045	Methyl chloride (I,T)
U156	Methyl chlorocarbonate (I,T)

Hazardous Waste No.	Substance
U226	Methyl chloroform
U157	3-Methylcholanthrene
U158	4,4'-Methylenebis(2-chloroaniline)
U132	2,2'-Methylenebis(3,4,6-trichlorophenol)
U068	Methylene bromide
U080	Methylene chloride
U122	Methylene oxide
U159	Methyl ethyl ketone (I,T)
U160	Methyl ethyl ketone peroxide (R,T)
U138	Methyl iodide
U161	Methyl isobutyl ketone (I)
U162	Methyl methacrylate (I,T)
U163	N-Methyl-N'-nitro-N-nitrosoguanidine
U161	4-Methyl-2-pentanone (I)
U164	Methylthiouracil
U010	Mitomycin C
U059	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxyl]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-
U165	Naphthalene
U047	Naphthalene, 2-chloro-
U166	1,4-Naphthalenedione
U236	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-(1,1'-biphenyl)-4,4'diyl)]-bis (azo)bis(5-amino-4-hydroxy)-, tetrasodium salt
U166	1,4,Naphthaquinone
U167	1-Naphthylamine
U168	2-Naphthylamine
U167	alpha-Naphthylamine

Hazardous Waste No.	Substance
U168	beta-Naphthylamine
U026	2-Naphthylamine, N,N'-bis(2-chloromethyl)-
U169	Nitrobenzene (I,T)
U170	p-Nitrophenol
U171	2-Nitropropane (I)
U172	N-Nitrosodi-n-butylamine
U173	N-Nitrosodiethanolamine
U174	N-Nitrosodiethylamine
U111	N-Nitroso-N-propylamine
U176	N-Nitroso-N-ethylurea
U177	N-Nitroso-N-methylurea
U178	N-Nitroso-N-methylurethane
U179	N-Nitrosopiperidine
U180	N-Nitrosopyrrolidine
U181	5-Nitro-o-toluidine
U193	1,2-Oxathiolane, 2,2-dioxide
U058	2H-1,3,2-Oxazaphosphorine, 2-[bis(2-chloroethyl)amino]tetrahydro-, 2-oxide
U115	Oxirane (I,T)
U041	Oxirane, 2-(chloromethyl)-
U182	Paraldehyde
U183	Pentachlorobenzene
U184	Pentachloroethane
U185	Pentachloronitrobenzene
U242	Pentachlorophenol
U186	1,3-Pentadiene (I)
U187	Phenacetin
U188	Phenol

Hazardous Waste No.	Substance
U048	Phenol, 2-chloro-
U039	Phenol, 4-chloro-3-methyl-
U081	Phenol, 2,4-dichloro-
U082	Phenol, 2,6-dichloro-
U101	Phenol, 2,4-dimethyl-
U170	Phenol, 4-nitro-
U242	Phenol, pentachloro-
U212	Phenol, 2,3,4,6-tetrachloro-
U230	Phenol, 2,4,5-trichloro-
U231	Phenol, 2,4,6-trichloro-
U137	1,10-(1,2-Phenylene)pyrene
U145	Phosphoric acid, Lead salt
U087	Phosphorodithioic acid, O,O-diethyl-, S-methylester
U189	Phosphorous sulfide (R)
U190	Phthalic anhydride
U191	2-Picoline
U192	Pronamide
U194	1-Propanamine (I,T)
U110	1-Propanamine, N-propyl- (I)
U066	Propane, 1,2-dibromo-3-chloro-
U149	Propanedinitrile
U171	Propane, 2-nitro- (I)
U027	Propane, 2,2'oxybis[2-chloro-
U193	1,3-Propane sultone

Hazardous Waste No.	Substance
U235	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U126	1-Propanol, 2,3-epoxy-
U140	1-Propanol, 2-methyl- (I,T)
U002	2-Propanone (I)
U007	2-Propenamide
U084	Propene, 1,3-dichloro-
U243	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	2-Propenenitrile
U152	2-Propenenitrile, 2-methyl- (I,T)
U008	2-Propenoic acid (I)
U113	2-Propenoic acid, ethyl ester (I)
U118	2-Propenoic acid, 2-methyl-, ethyl ester
U162	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U233	Propionic acid, 2-(2,4,5-trichlorophenoxy)-
U194	n-Propylamine (I,T)
U083	Propylene dichloride
U196	Pyridine
U155	Pyridine, 2-[(2-(dimethylamino)ethyl)-2-thenylamino]-
U179	Pyridine, hexahydro-N-nitroso-
U191	Pyridine, 2-methyl-
U164	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	Pyrrole, tetrahydro-N-nitroso-
U200	Reserpine
U201	Resorcinol
U202	Saccharin and salts
U203	Safrole
U204	Selenious acid

Hazardous Waste No.	Substance
U204	Selenium dioxide
U205	Selenium disulfide (R,T)
U015	L-Serine, diazoacetate (ester)
U233	Silvex
U089	4,4'-Stilbenediol, alpha,alpha'-diethyl-
U206	Streptozotocin
U135	Sulfur hydride
U103	Sulfuric acid, dimethyl ester
U189	Sulfur phosphide (R)
U205	Sulfur selenide (R,T)
U232	2,4,5-T
U207	1,2,4,5-Tetrachlorobenzene
U208	1,1,1,2-Tetrachloroethane
U209	1,1,2,2-Tetrachloroethane
U210	Tetrachloroethylene
U212	2,3,4,6-Tetrachlorophenol
U213	Tetrahydrofuran (I)
U214	Thallium(I) acetate
U215	Thallium(I) carbonate
U216	Thallium(I) chloride
U217	Thallium(I) nitrate
U218	Thioacetamide
U153	Thiomethanol (I,T)
U219	Thiourea

Hazardous Waste No.	Substance
U244	Thiram
U220	Toluene
U221	Toluenediamine
U223	Toluene diisocyanate (R,T)
U222	o-Toluidine hydrochloride
U011	1H-1,2,4-Triazol-3-amine
U226	1,1,1-Trichloroethane
U227	1,1,2-Trichloroethane
U228	Trichloroethene
U228	Trichloroethylene
U121	Trichloromonofluoromethane
U230	2,4,5-Trichlorophenol
U231	2,4,6-Trichlorophenol
U232	2,4,5-Trichlorophenoxyacetic acid
U234	sym-Trinitrobenzene (R,T)
U182	1,3,5-Trioxane, 2,4,5-trimethyl-
U235	Tris(2,3-dibromopropyl) phosphate
U236	Trypan blue
U237	Uracil, 5[bis(2-chloromethyl)amino]-
U237	Uracil mustard
U043	Vinyl chloride
U239	Xylene (I)
U200	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxy-benzoyl)oxy]-, methyl ester,

E. Discarded Commercial Chemical Products, Off-Specification Species, Containers, and Spill Residues Thereof (§261.33)

1. Deletion of Indomethacin

The Agency, at 45 FR 76533, indicated that the drug indomethacin would continue to be regulated as hazardous waste U245 when discarded. This action was a mistake, and resulted from the confusion of indomethacin's generic chemical name (1-(p-chlorobenzoyl)-5-methoxy-2-methylindole-3-acetic acid) with a very similar compound appearing on the Agency's Carcinogen Assessment Group's list of substances exhibiting substantial evidence of carcinogenicity. Since indomethacin does not otherwise appear to pose a substantial threat to human health and the environment if managed improperly, the Agency is deleting it from §261.33(f).

2. Regulation of Containers Which Formerly Held Acutely Hazardous Off-Specification Materials, and Regulation of Cleanup Residues of Spilled Off-Specification Materials

Questions have been raised as to whether §§261.33(c) and (d) of the regulations apply to containers which formerly held acutely hazardous off-specification materials (as well as to containers which formerly held commercial products and manufacturing chemical intermediates) and to cleanup residues of spilled off-specification materials (as well as to cleanup residues of spills of commercial products and manufacturing chemical intermediates). These provisions do in fact apply when off-specification materials are involved, but the regulatory language is somewhat confusing. §§261.33(c) and (d) apply to materials listed in §§261.33(e) and (f). Both of these provisions cover by reference, among other materials, the off-specification materials referred to in §261.33(b). However, to avoid any confusion, the Agency has decided to amend §§261.33 (c) and (d) to refer explicitly to off-specification materials. A conforming amendment also has been added to §261.5(e)(2) to make clear that the 100 kg cut-off limit for cleanup residues of spills of §261.33(e) materials applies to spills of acutely hazardous off-specification materials.[1]

3. Correction of Non-Substantive Errors

In the November 25, 1980 Federal Register, the wrong EPA Hazardous Waste Number was used to reference a specific chemical in the preamble to this section of the November 25, 1980 Federal Register (45 FR 78535). Specifically, toxaphene listed in the table at 45 FR 78535 as EPA Hazardous Waste No. U244 is incorrect; the number should read U224. This typographical error is corrected by this notice.

Finally, a number of mistakes and typographical errors were noted in §§261.33(e) and (f) after reviewing this section (45 FR 78541 - 78544). These are discussed in the following table:

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[1] A revised version of §261.33(c), which clarifies the status of residues of §261.33(c) materials in containers, is slated to become effective on May 25, 1981. See 45 FR at 78529 (November 25, 1980). The Agency will conform the text of that amendment with the regulatory language adopted today at the time of final promulgation.

EPA HAZARDOUS WASTE NUMBER	COMPOUND NAME	ACTION TAKEN	REASON
P001	3-(alpha-acetonylbenzyl)-4-hydroxycoumarin and salts	spelling corrected	compound should read: 3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts.
P006	Aluminum phosphide	corrected reason for listing	compound should read: Aluminum phosphide (R,T).
P008	4-aAminopyridine	spelling corrected	compound should read: 4-Aminopyridine.
P043	Phosphorofluoric acid, bis-(1-methylethyl)-ester	spelling corrected	compound should read: Phosphorofluoridic acid, bis(1-methylethyl) ester.
P047	Phenol, 2,4-dinitro-6-methyl-	listing corrected	On May 19, 1980, the compound was originally listed as 2,4-Dinitrocresol and salts. On Nov. 25, 1980, this compound was listed as Phenol, 2,4-dinitro-6-methyl-. The words "and salts" were inadvertently left out. The listing should read: Phenol, 2,4-di-nitro-6-methyl-, and salts.
P060	Hexachlorohexahydro-exo,exo-dimethanonaphthalene	spelling corrected	compound should read: Hexachlorohexahydro-endo,endo-dimethanonaphthalene.
P089	Phosphorothioci acid, 0,0-diethyl O-(p-nitrophenyl) ester	spelling corrected	compound should read: Phosphorothioic acid, 0,0-diethyl O-(p-nitrophenyl) ester.
P114	Thallium (I) selenite	spelling corrected	compound should read: Thallium (I) selenide.
U026	2-Naphthylamine, N,N'-bis(2-chloromethyl)-	spelling corrected	compound should read: 2-Naphthylamine, N,N-bis(2-chloroethyl)-.
U035	Butanoic acid, 4-[Bis(2-chloroethyl)amino]benzene-	spelling corrected	compound should read: Butanoic acid, 4-[bis(2-chloroethyl)amino]benzene-.
U058	2H-1,3,2-Oxazaphosphorine, 2-[bis(2-chloro-ethyl)amino]-tetrahydro-, oxide-2	spelling corrected	compound should read: 2H-1,3,2-Oxazaphosphorine, 2-[bis(2-chloroethyl)amino]tetrahydro-, 2-oxide.
U067	Etylene dibromide	spelling corrected	compound should read: Ethylene dibromide.

EPA HAZARDOUS WASTE NUMBER	COMPOUND NAME	ACTION TAKEN	REASON
U087	Phosphorodithioic acid, 0,0-diethyl-, S-methylester	spelling corrected	compound should read: Phosphorodithioic acid, 0,0-diethyl S-methyl ester.
U093	Benzenamine, N,N'-dimethyl-4-phenylazo-	spelling corrected	compound should read: Benzenamine, N,N-dimethyl-4-(phenylazo)-.
U105	Benzene, 1-methyl-1-2,4-dinitro-	spelling corrected	compound should read: Benzene, 1-methyl-2,4-dinitro-.
U111	Di-N-propylnitrosamine	spelling corrected	compound should read: Di-n-propylnitrosamine.
U111	N-Nitroso-N-propylamine	spelling corrected	compound should read: N-Nitrosodi-n-propylamine.
U114	Ethylenebis(dithiocarbamic acid)	change to Ethylenebis(dithiocarbamic acid), salts and esters	On May 19, 1980, the compound was originally listed as Ethylenebisdithiocarbamate. The November 25, 1980 Federal Register changed this compound to Ethylenebis(dithiocarbamic acid), without giving a reason for this change. The correct listing of U114, is Ethylenebis(dithiocarbamic acid), salts and esters; which is a clarification of the May 19, 1980 listing.
U115	Ethlene oxide	spelling corrected	compound should read: Ethylene oxide.
U118	Ethylmethacrylate	spelling corrected	compound should read: Ethyl methacrylate.
U121	Methane, trichlorofluoro-	one listing deleted	The compound was inadverently listed twice.
U126	1-Propanol, 2,3-epoxy-	spelling corrected	compound should read: 1-Propanal, 2,3-epoxy-
U137	1,10-(1,2-phenylene)pyrene	spelling corrected	compound should read: 1,10-(1,2-Phenylene)pyrene.

EPA HAZARDOUS WASTE NUMBER	COMPOUND NAME	ACTION TAKEN	REASON
U145	Phosphoric acid, Lead salt	spelling corrected	compound should read: Phosphoric acid, lead salt.
U148	1,2-Dihydro-3,6-pyradizine-dione	spelling corrected	compound should read: 1,2-Dihydro-3,6-pyridazinedione.
U155	Pyridine, 2-[(2-dimethylamino) -2-thenylamino]-	spelling corrected	compound should read: Pyridine, 2-[(2-dimethylamino) ethyl]-2-thenylamino-.
U163	Guanidine, N-nitroso-N-methyl-N'nitro-	spelling corrected	compound should read: Guanidine, N-nitroso-N-methyl-N'-nitro-.
U166	1,4-Naphthaquinone	spelling corrected	compound should read: 1,4-Naphthoquinone.
U182	1,3,5-Trioxane,2,4,5-trimethyl-	spelling corrected	compound should read: 1,3,5-Trioxane, 2,4,6-trimethyl-.
U185	Benzene, pentachloro-nitro-	spelling corrected	compound should read: Benzene, pentachloronitro-.
U189	Phosphorous sulfide	spelling corrected	compound should read: Phosphorus sulfide.
U202	1,2-Benzisothiazolin-3-one, 1,1-dioxide	listing corrected	On November 25, 1980, the compound was correctly listed as Saccharin and salts, however in the listing under its chemical name, the words "and salts" were inadverently left out. Compound should read 1,2-Benzisothiazolin-3-one, 1,1-dioxide, and salts.
U222	O-Toluidine hydrochloride	spelling corrected	compound should read: o-Toluidine hydrochloride.
U234	Benzene, 1,3,5-trinitro-	hazardous waste number corrected	hazardous waste number appears as "O234" and should be U234.
U237	Uracil, 5[bis(2-chloromethyl)-amino]-	spelling corrected	compound should read: Uracil, 5[bis(2-chloroethyl)amino]-.

EPA HAZARDOUS WASTE NUMBER	COMPOUND NAME	ACTION TAKEN	REASON
U240	2,44-D, salts and esters	spelling corrected	compound should read: 2,4-D, salts and esters.
U247	Methoxychlor, also known as Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)	added to §261.33(f)	This compound was ommited mistakenly from §261.33(f). Methoxychlor is an EP Toxicity constituent and is also one of the materials regulated by a National Interim Primary Drinking Water Standard; its toxicity therefore is well recognized. The background document for §261.33 indicated that all compounds for which a National Interim Primary Drinking Standard has been established are to be inculded under §261.33 (Background Document for §261.33, April 30, 1980, at pp. 19, 70), and all of the other pesticides covered by a Primary Drinking Water Standard are included under §261.33. In fact, comments were received questioning the (unintended) omission of methoxychlor. The Agency therefore believes that it has provided adequate notice for inclusion of this compound in §261.33, and is taking this opportunity to add it to §261.33(f).

3. The authority citation for Part 261 reads as follows:

AUTHORITY: Secs. 1006, 2002(a), 3001, and 3002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of of 1976, as amended (42 U.S.C. 6905, 6912(a), 6921 and 6922).

5. In FR Doc. 80-36683, appearing at page 78531 in the issue of November 25, 1980, 40 CFR 261.4(b) is corrected by redesignating paragraph (8) as (9).

(1) A total of one kilogram of commercial chemical products and manufacturing chemical intermediates having the generic names listed in §261.33(e), and off-specification commercial chemical products and manufacturing chemical intermediates which, if they met specifications, would have the generic names listed in §261.33(e).

(2) A total of 100 kilograms of any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any commercial chemical products or manufacturing chemical intermediates having the generic names listed in §261.33(e), or any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any off-specification commercial chemical

products or manufacturing chemical intermediates which, if they met specifications, would have the generic names listed in §261.33(e).

10. Amend §261.33 by revising the first sentence of paragraphs (c), (d), (e) and (f) to read as follows:

§261.33 Discarded Commercial Chemical Products, Off-Specification Species, Containers, and Spill Residues Thereof

* * * * *

(b) * * *

(c) Any container or inner liner removed from a container that has been used to hold any commercial chemical product or manufacturing chemical intermediate having the generic names listed in paragraph (e) of this section, or any container or inner liner removed from a container that has been used to hold any off-specification chemical product and manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraph (e) of this section, unless: * * *

(d) Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill into or on any land or water of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraphs (e) or (f) of this section, or any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any off-specification chemical product and manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraphs (e) or (f) of this section. * * *

(e) The commercial chemical products, manufacturing chemical intermediates or off-specification commercial chemical products or manufacturing chemical intermediates referred to in paragraphs (a) through (d) of this section, are identified as acute hazardous wastes (H) and are subject to be the small quantity exclusion defined in §261.5(e). * * *

(f) The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products referred to in paragraphs (a) through (d) of this section, are identified as toxic wastes (T) unless otherwise designated and are subject to the small quantity exclusion defined in §261.5 (a) and (f). * * *

* * * * *

11. Amend §261.33(f) by removing the following waste stream:

Hazardous Waste No.	Substance
U245	1-(p-Chlorobenzoyl)-5 methoxy-2-methylindole-3-acetic acid
U245	Indomethacin

12. Amend §261.33(f) by adding the following waste stream:

Hazardous Waste No.	Substance
U247	Methoxychlor
U247	Ethane,1,1,1,-trichloro-2,2-bis(p-methoxyphenyl)

§261.33 (e) and (f) updated - Spelling errors corrected - 4/23/81 - Baldev Bathija

HWNO	SUBSTANCE
P023	Acetaldehyde, chloro-
P002	Acetamide, N-(aminothioxomethyl)-
P057	Acetamide, 2-fluoro-
P058	Acetic acid, fluoro-, sodium salt
P066	Acetimidic acid, N-[(methylcarbamoyl)oxy]thio-, methyl ester
P001	3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts
P002	1-Acetyl-2-thiourea
P003	Acrolein
P070	Aldicarb
P004	Aldrin
P005	Allyl alcohol
P006	Aluminum phosphide (R,T)
P007	5-(Aminomethyl)-3-isoxazolol
P008	4-Aminopyridine
P009	Ammonium picrate (R)
P119	Ammonium vanadate
P010	Arsenic acid
P012	Arsenic(III) oxide
P011	Arsenic(V) oxide
P011	Arsenic pentoxide
P012	Arsenic trioxide
P038	Arsine, diethyl-
P054	Aziridine
P013	Barium cyanide
P024	Benzenamine, 4-chloro-
P077	Benzenamine, 4-nitro-

HWNO	SUBSTANCE
P028	Benzene, (chloromethyl)-
P042	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-
P014	Benzenethiol
P028	Benzyl chloride
P015	Beryllium dust
P016	Bis(chloromethyl) ether
P017	Bromoacetone
P018	Brucine
P021	Calcium cyanide
P123	Camphene, octachloro-
P103	Carbamimidoselenoic acid
P022	Carbon bisulfide
P022	Carbon disulfide
P095	Carbonyl chloride
P033	Chlorine cyanide
P023	Chloroacetaldehyde
P024	p-Chloroaniline
P026	1-(o-Chlorophenyl)thiourea
P027	3-Chloropropionitrile
P029	Copper cyanides
P030	Cyanides (soluble cyanide salts), not elsewhere specified
P031	Cyanogen
P033	Cyanogen chloride
P036	Dichlorophenylarsine
P037	Dieldrin
P038	Diethylarsine
P039	O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate

HWNO	SUBSTANCE
P041	Diethyl-p-nitrophenyl phosphate
P040	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	Diisopropyl fluorophosphate
P044	Dimethoate
P045	3,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methylamino)carbonyl] oxime
P071	O,O-Dimethyl O-p-nitrophenyl phosphorothioate
P082	Dimethylnitrosamine
P046	alpha,alpha-Dimethylphenethylamine
P047	4,6-Dinitro-o-cresol and salts
P034	4,6-Dinitro-o-cyclohexylphenol
P048	2,4-Dinitrophenol
P020	Dinoseb
P085	Diphosphoramide, octamethyl-
P039	Disulfoton
P049	2,4-Dithiobiuret
P109	Dithiopyrophosphoric acid, tetraethyl ester
P050	Endosulfan
P088	Endothall
P051	Endrin
P042	Epinephrine
P046	Ethanamine, 1,1-dimethyl-2-phenyl-
P084	Ethenamine, N-methyl-N-nitroso-
P101	Ethyl cyanide
P054	Ethylenimine
P097	Famphur
P056	Fluorine

HWNO	SUBSTANCE
P057	Fluoroacetamide
P058	Fluoroacetic acid, sodium salt
P065	Fulminic acid, mercury(II) salt (R,T)
P059	Heptachlor
P051	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,endo-1,4:5,8-dimethanonaphthalene
P037	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,exo-1,4:5,8-dimethanonaphthalene
P060	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, endo-dimethanonaphthalene
P004	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, exo-dimethanonaphthalene
P060	Hexachlorohexahydro-endo,endo-dimethanonaphthalene
P062	Hexaethyl tetraphosphate
P116	Hydrazinecarbothioamide
P068	Hydrazine, methyl-
P063	Hydrocyanic acid
P063	Hydrogen cyanide
P096	Hydrogen phosphide
P064	Isocyanic acid, methyl ester
P007	3(2H)-Isoxazolone, 5-(aminomethyl)-
P092	Mercury, (acetato-O)phenyl-
P065	Mercury fulminate (R,T)
P016	Methane, oxybis(chloro-
P112	Methane, tetranitro- (R)
P118	Methanethiol, trichloro-
P059	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
P066	Methomyl

HWNO	SUBSTANCE
P067	2-Methylaziridine
P068	Methyl hydrazine
P064	Methyl isocyanate
P069	2-Methyllactonitrile
P071	Methyl parathion
P072	alpha-Naphthylthiourea
P073	Nickel carbonyl
P074	Nickel cyanide
P074	Nickel(II) cyanide
P073	Nickel tetracarbonyl
P075	Nicotine and salts
P076	Nitric oxide
P077	p-Nitroaniline
P078	Nitrogen dioxide
P076	Nitrogen(II) oxide
P078	Nitrogen(IV) oxide
P081	Nitroglycerine (R)
P082	N-Nitrosodimethylamine
P084	N-Nitrosomethylvinylamine
P050	5-Norbornene-2,3-dimethanol, 1,4,5,6,7,7-hexachloro, cyclic sulfite
P085	Octamethylpyrophosphoramide
P087	Osmium oxide
P087	Osmium tetroxide
P088	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P089	Parathion
P034	Phenol, 2-cyclohexyl-4,6-dinitro-

HWNO	SUBSTANCE
P048	Phenol, 2,4-dinitro-
P047	Phenol, 2,4-dinitro-6-methyl-, and salts
P020	Phenol, 2,4-dinitro-6-(1-methylpropyl)-
P009	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P036	Phenyl dichloroarsine
P092	Phenylmercuric acetate
P093	N-Phenylthiourea
P094	Phorate
P095	Phosgene
P096	Phosphine
P041	Phosphoric acid, diethyl p-nitrophenyl ester
P044	Phosphorodithioic acid, 0,0-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
P043	Phosphorofluoridic acid, bis(1-methylethyl) ester
P094	Phosphorothioic acid, 0,0-diethyl S-(ethylthio)methyl ester
P089	Phosphorothioic acid, 0,0-diethyl 0-(p-nitrophenyl) ester
P040	Phosphorothioic acid, 0,0-diethyl 0-pyrazinyl ester
P097	Phosphorothioic acid, 0,0-dimethyl 0-[p-((dimethylamino)-sulfonyl)phenyl] ester
P110	Plumbane, tetraethyl-
P098	Potassium cyanide
P099	Potassium silver cyanide
P070	Propanal, 2-methyl-2-(methylthio)-, 0-[(methylamino)carbonyl]oxime
P101	Propanenitrile
P027	Propanenitrile, 3-chloro-
P069	Propanenitrile, 2-hydroxy-2-methyl-
P081	1,2,3-Propanetriol, trinitrate- (R)
P017	2-Propanone, 1-bromo-

HWNO	SUBSTANCE
P102	Propargyl alcohol
P003	2-Propenal
P005	2-Propen-1-ol
P067	1,2-Propylenimine
P102	2-Propyn-1-ol
P008	4-Pyridinamine
P075	Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts
P111	Pyrophosphoric acid, tetraethyl ester
P103	Selenourea
P104	Silver cyanide
P105	Sodium azide
P106	Sodium cyanide
P107	Strontium sulfide
P108	Strychnidin-10-one, and salts
P018	Strychnidin-10-one, 2,3-dimethoxy-
P108	Strychnine and salts
P115	Sulfuric acid, thallium(I) salt
P109	Tetraethyldithiopyrophosphate
P110	Tetraethyl lead
P111	Tetraethylpyrophosphate
P112	Tetranitromethane (R)
P062	Tetraphosphoric acid, hexaethyl ester
P113	Thallic oxide
P113	Thallium(III) oxide
P114	Thallium(I) selenide
P115	Thallium(I) sulfate

HWNO	SUBSTANCE
P045	Thiofanox
P049	Thioimidodicarbonic diamide
P014	Thiophenol
P116	Thiosemicarbazide
P026	Thiourea, (2-chlorophenyl)-
P072	Thiourea, 1-naphthalenyl-
P093	Thiourea, phenyl-
P123	Toxaphene
P118	Trichloromethanethiol
P119	Vanadic acid, ammonium salt
P120	Vanadium pentoxide
P120	Vanadium(V) oxide
P001	Warfarin
P121	Zinc cyanide
P122	Zinc phosphide (R,T)

§261.33(e) and (f) updated - Spelling errors corrected - 4/7/81 - Baldev Bathija

HAZARDOUS WASTE NO.	SUBSTANCE
U001	Acetaldehyde (I)
U034	Acetaldehyde, trichloro-
U187	Acetamide, N-(4-ethoxyphenyl)-
U005	Acetamide, N-9H-fluoren-2-yl-
U112	Acetic acid, ethyl ester (I)
U144	Acetic acid, lead salt
U214	Acetic acid, thallium(I) salt
U002	Acetone (I)
U003	Acetonitrile (I,T)
U004	Acetophenone
U005	2-Acetylaminofluorene
U006	Acetyl chloride (C,R,T)
U007	Acrylamide
U008	Acrylic acid (I)
U009	Acrylonitrile
U150	Alanine, 3-[p-bis(2-chloroethyl)amino]phenyl-, L-
U011	Amitrole
U012	Aniline (I,T)
U014	Auramine
U015	Azaserine
U010	Azirino(2',3':3,4)pyrrolo(1,2-a)indole-4,7-dione, 6-amino-8-[((aminocarbonyl)oxy)methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-
U157	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	Benz[c]acridine

HWNO	SUBSTANCE
U016	3,4-Benzacridine
U017	Benzal chloride
U018	Benz[a]anthracene
U018	1,2-Benzanthracene
U094	1,2-Benzanthracene, 7,12-dimethyl-
U012	Benzenamine (I,T)
U014	Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl-
U049	Benzenamine, 4-chloro-2-methyl-
U093	Benzenamine, N,N-dimethyl-4-phenylazo-
U158	Benzenamine, 4,4'-methylenebis(2-chloro-
U222	Benzenamine, 2-methyl-, hydrochloride
U181	Benzenamine, 2-methyl-5-nitro-
U019	Benzene (I,T)
U038	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
U030	Benzene, 1-bromo-4-phenoxy-
U037	Benzene, chloro-
U190	1,2-Benzenedicarboxylic acid anhydride
U028	1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester
U069	1,2-Benzenedicarboxylic acid, dibutyl ester
U088	1,2-Benzenedicarboxylic acid, diethyl ester
U102	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	1,2-Benzenedicarboxylic acid, di-n-octyl ester
U070	Benzene, 1,2-dichloro-
U071	Benzene, 1,3-dichloro-
U072	Benzene, 1,4-dichloro-
U017	Benzene, (dichloromethyl)-

HWNO	SUBSTANCE
U223	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	Benzene, dimethyl- (I,T)
U201	1,3-Benzenediol
U127	Benzene, hexachloro-
U056	Benzene, hexahydro- (I)
U188	Benzene, hydroxy-
U220	Benzene, methyl-
U105	Benzene, 1-methyl-2,4-dinitro-
U106	Benzene, 1-methyl-2,6-dinitro-
U203	Benzene, 1,2-methylenedioxy-4-allyl-
U141	Benzene, 1,2-methylenedioxy-4-propenyl-
U090	Benzene, 1,2-methylenedioxy-4-propyl-
U055	Benzene, (1-methylethyl)- (I)
U169	Benzene, nitro- (I,T)
U183	Benzene, pentachloro-
U185	Benzene, pentachloronitro-
U020	Benzenesulfonic acid chloride (C,R)
U020	Benzenesulfonyl chloride (C,R)
U207	Benzene, 1,2,4,5-tetrachloro-
U023	Benzene, (trichloromethyl)- (C,R,T)
U234	Benzene, 1,3,5-trinitro- (R,T)
U021	Benzidine
U202	1,2-Benzisothiazolin-3-one, 1,1-dioxide, and salts
U120	Benzo[j,k]fluorene
U022	Benzo[a]pyrene
U022	3,4-Benzopyrene
U197	p-Benzoquinone

HWNO	SUBSTANCE
U023	Benzotrichloride (C,R,T)
U050	1,2-Benzphenanthrene
U085	2,2'-Bioxirane (I,T)
U021	(1,1'-Biphenyl)-4,4'-diamine
U073	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dichloro-
U091	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethoxy-
U095	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl-
U024	Bis(2-chloroethoxy) methane
U027	Bis(2-chloroisopropyl) ether
U244	Bis(dimethylthiocarbamoyl) disulfide
U028	Bis(2-ethylhexyl) phthalate
U246	Bromine cyanide
U225	Bromoform
U030	4-Bromophenyl phenyl ether
U128	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	1-Butanamine, N-butyl-N-nitroso-
U035	Butanoic acid, 4-[bis(2-chloroethyl)amino]benzene-
U031	1-Butanol (I)
U159	2-Butanone (I,T)
U160	2-Butanone peroxide (R,T)
U053	2-Butenal
U074	2-Butene, 1,4-dichloro- (I,T)
U031	n-Butyl alcohol (I)
U136	Cacodylic acid
U032	Calcium chromate
U238	Carbamic acid, ethyl ester

HWNO	SUBSTANCE
U178	Carbamic acid, methylnitroso-, ethyl ester
U176	Carbamide, N-ethyl-N-nitroso-
U177	Carbamide, N-methyl-N-nitroso-
U219	Carbamide, thio-
U097	Carbamoyl chloride, dimethyl-
U215	Carbonic acid, dithallium(I) salt
U156	Carbonochloridic acid, methyl ester (I,T)
U033	Carbon oxyfluoride (R,T)
U211	Carbon tetrachloride
U033	Carbonyl fluoride (R,T)
U034	Chloral
U035	Chlorambucil
U036	Chlordane, technical
U026	Chlornaphazine
U037	Chlorobenzene
U039	4-Chloro-m-cresol
U041	1-Chloro-2,3-epoxypropane
U042	2-Chloroethyl vinyl ether
U044	Chloroform
U046	Chloromethyl methyl ether
U047	beta-Chloronaphthalene
U048	o-Chlorophenol
U049	4-Chloro-o-toluidine, hydrochloride
U032	Chromic acid, calcium salt
U050	Chrysene
U051	Creosote

HWNO	SUBSTANCE
U052	Cresols
U052	Cresylic acid
U053	Crotonaldehyde
U055	Cumene (I)
U246	Cyanogen bromide
U197	1,4-Cyclohexadienedione
U056	Cyclohexane (I)
U057	Cyclohexanone (I)
U130	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
U058	Cyclophosphamide
U240	2,4-D, salts and esters
U059	Daunomycin
U060	DDD
U061	DDT
U142	Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one
U062	Diallate
U133	Diamine (R,T)
U221	Diaminotoluene
U063	Dibenz[a,h]anthracene
U063	1,2:5,6-Dibenzanthracene
U064	1,2:7,8-Dibenzopyrene
U064	Dibenz[a,i]pyrene
U066	1,2-Dibromo-3-chloropropane
U069	Dibutyl phthalate
U062	S-(2,3-Dichloroallyl) diisopropylthiocarbamate
U070	o-Dichlorobenzene

HWNO	SUBSTANCE
U071	m-Dichlorobenzene
U072	p-Dichlorobenzene
U073	3,3'-Dichlorobenzidine
U074	1,4-Dichloro-2-butene (I,T)
U075	Dichlorodifluoromethane
U192	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide
U060	Dichloro diphenyl dichloroethane
U061	Dichloro diphenyl trichloroethane
U078	1,1-Dichloroethylene
U079	1,2-Dichloroethylene
U025	Dichloroethyl ether
U081	2,4-Dichlorophenol
U082	2,6-Dichlorophenol
U240	2,4-Dichlorophenoxyacetic acid, salts and esters
U083	1,2-Dichloropropane
U084	1,3-Dichloropropene
U085	1,2:3,4-Diepoxybutane (I,T)
U108	1,4-Diethylene dioxide
U086	N,N-Diethylhydrazine
U087	O,O-Diethyl-S-methyl-dithiophosphate
U088	Diethyl phthalate
U089	Diethylstilbestrol
U148	1,2-Dihydro-3,6-pyridazinedione
U090	Dihydrosafrole
U091	3,3'-Dimethoxybenzidine
U092	Dimethylamine (I)

HWNO	SUBSTANCE
U093	Dimethylaminoazobenzene
U094	7,12-Dimethylbenz[a]anthracene
U095	3,3'-Dimethylbenzidine
U096	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	Dimethylcarbamoyl chloride
U098	1,1-Dimethylhydrazine
U099	1,2-Dimethylhydrazine
U101	2,4-Dimethylphenol
U102	Dimethyl phthalate
U103	Dimethyl sulfate
U105	2,4-Dinitrotoluene
U106	2,6-Dinitrotoluene
U107	Di-n-octyl phthalate
U108	1,4-Dioxane
U109	1,2-Diphenylhydrazine
U110	Dipropylamine (I)
U111	Di-n-propylnitrosamine
U001	Ethanal (I)
U174	Ethanamine, N-ethyl-N-nitroso-
U067	Ethane, 1,2-dibromo-
U076	Ethane, 1,1-dichloro-
U077	Ethane, 1,2-dichloro-
U114	1,2-Ethanediylbiscarbamodithioic acid
U131	Ethane, 1,1,1,2,2,2-hexachloro-
U024	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-
U003	Ethanenitrile (I,T)

HWNO	SUBSTANCE
U117	Ethane, 1,1'-oxybis- (I)
U025	Ethane, 1,1'-oxybis[2-chloro-
U184	Ethane, pentachloro-
U208	Ethane, 1,1,1,2-tetrachloro-
U209	Ethane, 1,1,2,2-tetrachloro-
U218	Ethanethioamide
U227	Ethane, 1,1,2-trichloro-
U247	Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)-
U043	Ethene, chloro-
U042	Ethene, 2-chloroethoxy-
U078	Ethene, 1,1-dichloro-
U079	Ethene, trans-1,2-dichloro-
U210	Ethene, 1,1,2,2-tetrachloro-
U173	Ethanol, 2,2'-(nitrosoimino)bis-
U004	Ethanone, 1-phenyl-
U006	Ethanoyl chloride (C,R,T)
U112	Ethyl acetate (I)
U113	Ethyl acrylate (I)
U238	Ethyl carbamate (urethan)
U038	Ethyl 4,4'-dichlorobenzilate
U114	Ethylenebis(dithiocarbamic acid), salts and esters
U067	Ethylene dibromide
U077	Ethylene dichloride
U115	Ethylene oxide (I,T)
U116	Ethylene thiourea
U117	Ethyl ether (I)

HWNO	SUBSTANCE
U076	Ethylidene dichloride
U118	Ethyl methacrylate
U119	Ethyl methanesulfonate
U139	Ferric dextran
U120	Fluoranthene
U122	Formaldehyde
U123	Formic acid (C,T)
U124	Furan (I)
U125	2-Furancarboxaldehyde (I)
U147	2,5-Furandione
U213	Furan, tetrahydro- (I)
U125	Furfural (I)
U124	Furfuran (I)
U206	D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-
U126	Glycidylaldehyde
U163	Guanidine, N-nitroso-N-methyl-N'-nitro-
U127	Hexachlorobenzene
U128	Hexachlorobutadiene
U129	Hexachlorocyclohexane (gamma isomer)
U130	Hexachlorocyclopentadiene
U131	Hexachloroethane
U132	Hexachlorophene
U243	Hexachloropropene
U133	Hydrazine (R,T)
U086	Hydrazine, 1,2-diethyl-
U098	Hydrazine, 1,1-dimethyl-

HWNO	SUBSTANCE
U099	Hydrazine, 1,2-dimethyl-
U109	Hydrazine, 1,2-diphenyl-
U134	Hydrofluoric acid (C,T)
U134	Hydrogen fluoride (C,T)
U135	Hydrogen sulfide
U096	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U136	Hydroxydimethylarsine oxide
U116	2-Imidazolidinethione
U137	Indeno[1,2,3-cd]pyrene
U139	Iron dextran
U140	Isobutyl alcohol (I,T)
U141	Isosafrole
U142	Kepone
U143	Lasiocarpine
U144	Lead acetate
U145	Lead phosphate
U146	Lead subacetate
U129	Lindane
U147	Maleic anhydride
U148	Maleic hydrazide
U149	Malononitrile
U150	Melphalan
U151	Mercury
U152	Methacrylonitrile (I,T)
U092	Methanamine, N-methyl- (I)
U029	Methane, bromo-

HWNO	SUBSTANCE
U045	Methane, chloro- (I,T)
U046	Methane, chloromethoxy-
U068	Methane, dibromo-
U080	Methane, dichloro-
U075	Methane, dichlorodifluoro-
U138	Methane, iodo-
U119	Methanesulfonic acid, ethyl ester
U211	Methane, tetrachloro-
U153	Methanethiol (I,T)
U225	Methane, tribromo-
U044	Methane, trichloro-
U121	Methane, trichlorofluoro-
U123	Methanoic acid (C,T)
U036	4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-
U154	Methanol (I)
U155	Methapyrilene
U247	Methoxychlor
U154	Methyl alcohol (I)
U029	Methyl bromide
U186	1-Methylbutadiene (I)
U045	Methyl chloride (I,T)
U156	Methyl chlorocarbonate (I,T)
U226	Methyl chloroform
U157	3-Methylcholanthrene
U158	4,4'-Methylenebis(2-chloroaniline)
U132	2,2'-Methylenebis(3,4,6-trichlorophenol)
U068	Methylene bromide

HWNO	SUBSTANCE
U080	Methylene chloride
U122	Methylene oxide
U159	Methyl ethyl ketone (I,T)
U160	Methyl ethyl ketone peroxide (R,T)
U138	Methyl iodide
U161	Methyl isobutyl ketone (I)
U162	Methyl methacrylate (I,T)
U163	N-Methyl-N'-nitro-N-nitrosoguanidine
U161	4-Methyl-2-pentanone (I)
U164	Methylthiouracil
U010	Mitomycin C
U059	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxyl]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-
U165	Naphthalene
U047	Naphthalene, 2-chloro-
U166	1,4-Naphthalenedione
U236	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-(1,1'-biphenyl)-4,4'diyl)]-bis (azo)bis(5-amino-4-hydroxy)-, tetrasodium salt
U166	1,4-Naphthoquinone
U167	1-Naphthylamine
U168	2-Naphthylamine
U167	alpha-Naphthylamine
U168	beta-Naphthylamine
U026	2-Naphthylamine, N,N-bis(2-chloroethyl)-
U169	Nitrobenzene (I,T)
U170	p-Nitrophenol
U171	2-Nitropropane (I)

HWNO	SUBSTANCE
U172	N-Nitrosodi-n-butylamine
U173	N-Nitrosodiethanolamine
U174	N-Nitrosodiethylamine
U111	N-Nitrosodi-n-propylamine
U176	N-Nitroso-N-ethylurea
U177	N-Nitroso-N-methylurea
U178	N-Nitroso-N-methylurethane
U179	N-Nitrosopiperidine
U180	N-Nitrosopyrrolidine
U181	5-Nitro-o-toluidine
U193	1,2-Oxathiolane, 2,2-dioxide
U058	2H-1,3,2-Oxazaphosphorine, 2-[bis(2-chloroethyl)amino]tetrahydro-, 2-oxide
U115	Oxirane (I,T)
U041	Oxirane, 2-(chloromethyl)-
U182	Paraldehyde
U183	Pentachlorobenzene
U184	Pentachloroethane
U185	Pentachloronitrobenzene
U242	Pentachlorophenol
U186	1,3-Pentadiene (I)
U187	Phenacetin
U188	Phenol
U048	Phenol, 2-chloro-
U039	Phenol, 4-chloro-3-methyl-
U081	Phenol, 2,4-dichloro-
U082	Phenol, 2,6-dichloro-

HWNO	SUBSTANCE
U101	Phenol, 2,4-dimethyl-
U170	Phenol, 4-nitro-
U242	Phenol, pentachloro-
U212	Phenol, 2,3,4,6-tetrachloro-
U230	Phenol, 2,4,5-trichloro-
U231	Phenol, 2,4,6-trichloro-
U137	1,10-(1,2-Phenylene)pyrene
U145	Phosphoric acid, lead salt
U087	Phosphorodithioic acid, O,O-diethyl S-methyl ester
U189	Phosphorous sulfide (R)
U190	Phthalic anhydride
U191	2-Picoline
U192	Pronamide
U194	1-Propanamine (I,T)
U110	1-Propanamine, N-propyl- (I)
U066	Propane, 1,2-dibromo-3-chloro-
U149	Propanedinitrile
U171	Propane, 2-nitro- (I)
U027	Propane, 2,2'-oxybis[2-chloro-
U193	1,3-Propane sultone
U235	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U126	1-Propanal, 2,3-epoxy-
U140	1-Propanol, 2-methyl- (I,T)
U002	2-Propanone (I)
U007	2-Propenamide
U084	Propene, 1,3-dichloro-
U243	1-Propene, 1,1,2,3,3,3-hexachloro-

HWNO	SUBSTANCE
U009	2-Propenenitrile
U152	2-Propenenitrile, 2-methyl- (I,T)
U008	2-Propenoic acid (I)
U113	2-Propenoic acid, ethyl ester (I)
U118	2-Propenoic acid, 2-methyl-, ethyl ester
U162	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U233	Propionic acid, 2-(2,4,5-trichlorophenoxy)-
U194	n-Propylamine (I,T)
U083	Propylene dichloride
U196	Pyridine
U155	Pyridine, 2-[(2-(dimethylamino)ethyl)-2-thenylamino]-
U179	Pyridine, hexahydro-N-nitroso-
U191	Pyridine, 2-methyl-
U164	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	Pyrrole, tetrahydro-N-nitroso-
U200	Reserpine
U201	Resorcinol
U202	Saccharin and salts
U203	Safrole
U204	Selenious acid
U204	Selenium dioxide
U205	Selenium disulfide (R,T)
U015	L-Serine, diazoacetate (ester)
U233	Silvex
U089	4,4'-Stilbenediol, alpha,alpha'-diethyl-
U206	Streptozotocin

HWNO	SUBSTANCE
U135	Sulfur hydride
U103	Sulfuric acid, dimethyl ester
U189	Sulfur phosphide (R)
U205	Sulfur selenide (R,T)
U232	2,4,5-T
U207	1,2,4,5-Tetrachlorobenzene
U208	1,1,1,2-Tetrachloroethane
U209	1,1,2,2-Tetrachloroethane
U210	Tetrachloroethylene
U212	2,3,4,6-Tetrachlorophenol
U213	Tetrahydrofuran (I)
U214	Thallium(I) acetate
U215	Thallium(I) carbonate
U216	Thallium(I) chloride
U217	Thallium(I) nitrate
U218	Thioacetamide
U153	Thiomethanol (I,T)
U219	Thiourea
U244	Thiram
U220	Toluene
U221	Toluenediamine
U223	Toluene diisocyanate (R,T)
U222	o-Toluidine hydrochloride
U011	1H-1,2,4-Triazol-3-amine
U226	1,1,1-Trichloroethane
U227	1,1,2-Trichloroethane

HWNO	SUBSTANCE
U228	Trichloroethene
U228	Trichloroethylene
U121	Trichloromonofluoromethane
U230	2,4,5-Trichlorophenol
U231	2,4,6-Trichlorophenol
U232	2,4,5-Trichlorophenoxyacetic acid
U234	sym-Trinitrobenzene (R,T)
U182	1,3,5-Trioxane, 2,4,6-trimethyl-
U235	Tris(2,3-dibromopropyl) phosphate
U236	Trypan blue
U237	Uracil, 5-[bis(2-chloroethyl)amino]-
U237	Uracil mustard
U043	Vinyl chloride
U239	Xylene (I)
U200	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxy-benzoyl)oxy]-, methyl ester